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THE PREVENTION OF DEFORMITIES IN CHRONIC ARTHRITIS

I. THE UPPER EXTREMITY

LORING T. SWAIM, M.D.
AND
JOHN G. KUHNS, M.D.
BOSTON

Prevention fills an important place in present-day medicine. Much progress has been made in decreasing the mortality and the morbidity rate of many of the commoner diseases. In chronic arthritis, however, while intensive study has clarified many obscure features of the disease, little effective effort has been made to prevent deformities. Even when the cause of the arthritis has been discovered, deformities often have not been prevented. The deformities of arthritis are more serious, as far as the patient is concerned, than any other feature of the disease, since they persist and frequently get worse after the arthritis has ceased unless they are prevented. Many of them are very difficult to correct. When contractures and subluxations with adhesions have occurred, it is impossible to restore the joint to a condition as nearly normal as would have been possible if the deformity had been prevented. It is this feature of the treatment of arthritis, which was shown by one of us [1] previously, which we propose to emphasize particularly in this paper, believing that prevention is possible.

If the mental and physical suffering which such crippling entails is disregarded and the subject is considered only from an economic point of view, the yearly loss from such invalidism is appalling. In Sweden [2] arthritis accounts for 9.1 per cent of all cases of "permanent pensionable invalidity," as against 5.8 per cent for tuberculosis. The British Ministry of Health [3] states in a recent report on chronic arthritis, tabulated from insurance statistics, that about a million pounds a year is spent in sick benefits for arthritis alone. In Holland, with a population of seven millions, Van Breemen [4] estimates that between two and three hundred persons become invalids from arthritis each year. While many physicians in this country write of the widespread prevalence of the disease and its frequent occurrence after industrial injuries, there are no dependable statistics.

The plan of this series of papers is to describe the more common preventable deformities occurring about various joints, and to show a simple apparatus for their correction. It is, of course, understood that if a joint is to become stiff, just as in tuberculosis, it should stiffen in the most useful position. As to the methods of prevention in general, our experience has given us a few rules, which are that: (*a*) When a case of arthritis is first seen, a careful appraisal of the condition of the various joints should be made and steps should be taken at once to prevent the usual deformities from occurring. (*b*) Throughout the treatment of the patient, constant vigilance must be exercised to prevent the assumption of positions likely to lead to deformity. (*c*) The physician should also bear in mind that rest and exercise of the joint are essential to its well being. (*d*) Motion should be encouraged in all stages of the disease but must never be forced; the activity should consist wholly of the patient's attempt to do what he can in the normal use of the joint. (*e*) Rest in a position least likely to cause strain or contracture should be secured when the joint is not in use, particularly at night, as position during sleep is most important.

THE SHOULDER

The position assumed in any inflammatory process about the shoulder joint is one with the arm held tightly adducted to the body and rotated inward. Usually the elbow is flexed, with the forearm across the body. The position produced by a sling (fig. 1) is characteristic and, for an arthritic patient, is a pernicious effort at fixation of the arm. Stiffness (fig. 2) results because of adhesions in bursae and joint and contractures of muscles, capsule and bursae. Associated with this there is a drooping of the chest and the shoulder rolls forward. Occasionally an actual forward dislocation may occur. True ankylosis of the shoulder joint occurs very rarely in arthritis.

Our first consideration in preventing shoulder deformity is to see that the shoulders are kept in the normal position. The normal position of the shoulder in the erect attitude is one with the scapula flat on the ribs posteriorly, with the humerus a little outwardly rotated, the head of the humerus well in the glenoid fossa under the acromioclavicular joint, with a free space in front between the head of the humerus and the coracoid process.[5] From a mechanical standpoint this position is best for the effective functioning of the shoulder joint. When the patient is in bed, the hands should be placed under the head with the flexed elbows stretched out on the bed (fig. 3). This should be done for short periods several times a day. During the acute period of an attack of arthritis, the arm should be held with pillows or sandbags in 90 degrees of abduction and full external rotation. Codman [6] has shown that in

1. Swaim, L. T.: J. Bone & Joint Surg. **10**: 742 (Oct.) 1928.
2. Van Breemen, J.; Fox, R. F.; Llewellyn, L. J.; Poulton, E. P., and Ray, M. B.: Lancet **2**: 100 (July 11) 1925.
3. Report on Arthritis by the British Ministry of Health, 1928.
4. Van Breemen, J.: M. J. & Rec. **128**: 469 (Nov. 7) 1928.
5. Goldthwait, J. E.: Am. J. Orthop. Surg., May, 1909.
6. Codman, E.: Boston M. & S. J., July 27, 1911.

this position adhesions form less readily and the use of the shoulder is not lost. When the patient sits up and becomes ambulatory, an airplane splint may be used, holding the arm in 90 degrees abduction and full external rotation. This should be used at intervals for a period of only a few weeks. In many cases elastic shoulder straps worn like suspenders will hold the shoulders in good position and facilitate proper function. Exercises to maintain abduction and external rotation should be carried out until the shoulder is well. Heat, massage and occupational therapy are of great value, but these alone will not prevent deformity.

Fig. 1.—The sling holds the shoulder adducted and internally rotated; attention is called to the forward droop of the shoulder.

In quiescent arthritis, deformity can often be corrected by traction and exercise (fig. 4). Manipulation under anesthesia, if carried out gently, is a safe and usually effective method of treatment. For ankylosis or marked contracture there are various types of reconstruction operations. As a last resort the shoulder can be allowed to ankylose in the position most useful for function. This has been described by Steindler[7] as 70 degrees abduction, from 30 to 45 degrees forward flexion, and rotation of the arm midway between pronation and supination.

GENERAL ATROPHY OF MUSCLES

Muscle weakness and muscle atrophy are common features in arthritis. They may be observed in the early stages of the disease (fig. 5). Much of this wasting of muscles is due simply to nonuse, because the muscles are sore and joint motion is painful. A little later, stiffness and the various deformities which develop prevent the proper functioning of muscles. In some cases a neurologic lesion may play a part,[8] particularly when there is an associated spinal arthritis, as has been observed by Gordon,[9] Gunther,[10] and others. A fuller consideration of this problem will be given in our next paper on arthritis of the spine. Endocrine dysfunctions also are probably the cause in certain cases. The lack of muscular tone which one frequently observes in women at the menopause suggests such dysfunction, and the use of thyroid extract and active ovarian preparations, under close medical supervision, has been found helpful. While this flabbiness and loss of muscle substance do not cause deformity, they play an important rôle in general recovery and in the correction of deformity. Judicious exercising, well within the fatigue limit, is the chief therapy, and here properly supervised occupational work offers the added stimulus of interest.

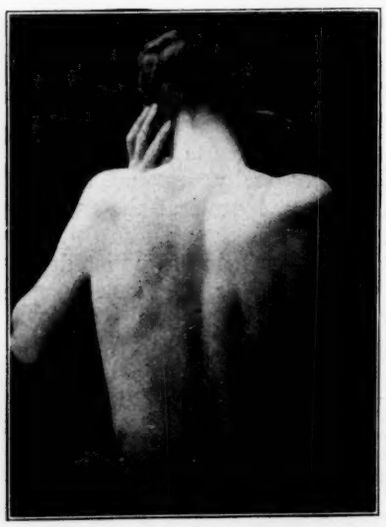

Fig. 2.—Arthritis of five years' duration; note inability to abduct and externally rotate arms.

Fig. 3.—Position to be assumed to prevent shoulder deformities in early arthritis.

THE ELBOW

The elbow is a joint very frequently involved in arthritis, and consequently it should be watched with especial care. The first indication of inflammation of this joint is usually pain on complete extension or complete flexion—the pain being referred either to the olecranon fossa or to the attachment of the head of the biceps. The elbow is held in a flexed position; if the patient is in bed, it is invariably carried at right angles with the hand resting on the chest (fig. 6). Stiffness and contractures develop rapidly, so that full extension and full flexion are impossible. There is usually inward rotation of the hand leading to a pronation deformity of the forearm and hand as well. At night, particularly, this flexed position is rigidly held in order to assure comfort and sleep, but deformity is the result.

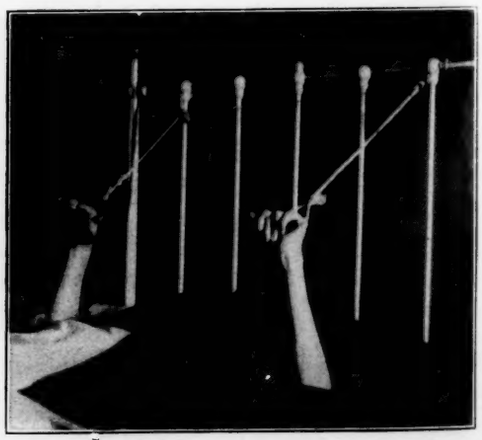

Fig. 4.—Simple traction apparatus for increasing shoulder motion.

In the early stages of arthritis a simple plaster gutter splint made with the elbow in full extension, worn at night, will give comfort and tend to prevent contracture. Full use of the elbow may be permitted during the day augmented by exercises, baking and physical therapy. When ankylosis progresses, as it occasionally will, in

7. Steindler, A.: Operative Orthopedics, New York, D. Appleton & Co., 1925.
8. Rendall, S.: Practitioner **121**: 121 (Aug.) 1928.
9. Gordan, A.: Ann. Int. Med. **1**: 819 (April) 1928.
10. Gunther, L.: California & West. Med. **29**: 152 (Sept.) 1928.

spite of attempts at prevention, a useful position of the elbow should be secured; that is, one in which the hand can reach the face. An elbow stiff in a position of less than 90 degrees flexion makes for a nearly useless arm. There is one danger, however, in the

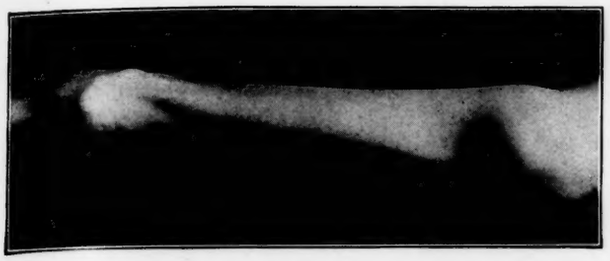

Fig. 5.—Attention is called to the bone outline under the skin.

stiff flexed elbow: the leverage which it exerts tends to dislocate the shoulder forward when in the upright position. This ruins the shoulder.

When the arthritis is quiescent and limited motion is possible, the motion can be increased by a series of

Fig. 6.—The position commonly assumed in arthritis of the elbow; there is pronation of the forearm and ulnar deviation of the fingers.

plaster splints holding the arm as fully extended or as fully flexed as the comfort of the patient will permit, each securing a little more flexion or extension. Splints for constant traction [11] can readily be constructed from thin boards bandaged to the arm with a hinge at the elbow. Traction for flexion is secured by a coil spring, for extension by a screen door hinge. Manipulation of elbows is not satisfactory since it usually leads to increased stiffness. When ankylosis has occurred, a useful, painless elbow can be obtained in most cases by an arthroplastic operation.

THE WRIST

When the wrist joint is involved in arthritis, gravity and muscle spasm, in which the flexors are more powerful, gradually pull the hand into palmar flexion. In bed, the hand rests across the body; this leads to deformity in pronation, flexion of the wrist, and ulnar deviation of the fingers. This deformity is readily prevented by a cock-up splint holding the wrist in about 30 degrees of dorsiflexion (fig. 7). Such splints can be made either from metal or from plaster of paris. They may extend beyond the fingers or only into the palm of the hand. In making these splints it is essential to remember the arches of the palm, which must be preserved in order to keep the pinch action of thumb and fingers. Splints of this type need to be used only at night in the milder cases. They invariably relieve pain and congestion of the hand. More motion is preserved by this protection, with light exercise during the waking hours, than by any other means. In our experience, a splint of this type can be worn intermittently as described for months without any deleterious effect, while the arthritis is becoming quiescent. In cases in which deformity has already developed, it may be corrected gradually by a series of cock-up splints, each one securing a little more dorsiflexion of the wrist, or a traction splint may be used. Manipulation of the wrist under anesthesia, followed by the use of a splint, will often hasten correction. When there is contracture, or ankylosis, in marked palmar flexion, the wrist as a last resort can be ankylosed by operation in a position of about 30 degrees of dorsiflexion, the most useful position for grasping.

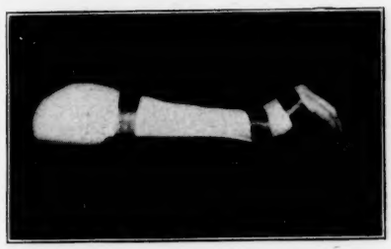

Fig. 7.—A simple metal cock-up splint; this should extend from the upper end of the forearm to the metatarsal heads.

THE HAND

One of the commonest deformities of the arthritic hand is "flat hand," [12] often associated with a partial subluxation of the thumb. This frequently comes from an attempt to bear the weight on the palms of the hand in rising and sitting down or in using crutches. It can be avoided to a large extent if the hand is used for grasping and not for carrying the body weight. In the early stages it can readily be corrected by a properly molded palmar arch in the cock-up splint or by a wrist strap worn tightly around the proximal row of carpal bones (fig. 8). The latter also corrects the

Fig. 8.—Wrist strap applied; note the absence of the palmar arches.

11. Calonge, S. D.: Treatment of Fibrous Ankylosis of Knee and Elbow Joints, J. A. M. A. **89**: 1427 (Oct. 22) 1927.

12. Goldthwait, J. E.: J. Bone & Joint Surg. **4**: 469 (July) 1922.

subluxation of the thumb, which usually gives no more trouble when the proper interarticulation of the carpal bones is assured. In a number of patients a humplike (fig. 9) deformity develops on the dorsum of the hand associated with ankylosis of the carpal bones. Here there is much limitation of metacarpal movement and the patient loses to a great extent the side to side finger movements.

THE FINGERS

Neglect of the fingers in arthritis produces crippling equal in importance economically to the combined crippling in all the other joints. The deformities occurring in fingers are primarily due to the position in which the patient habitually rests the hand. The common deformities are: (*a*) Ulnar deviation of the fingers (flipper hand). Here there is often a backward or lateral dislocation at the metacarpal phalangeal joints. (*b*) Hyperextension contracture at the metacarpal phalangeal joints (fig. 10), often with dislocation at these joints. There is usually a compensatory acute flexion at the interphalangeal joints and a marked atrophy of the interossei and lumbrical muscles. (*c*) Flexion contraction at the metacarpal phalangeal joints. This usually does not cause much disturbance in function. (*d*) Dislocation at the interphalangeal joints. This is one of the most crippling of deformities. It may be either an anterior or a lateral dislocation, permitting very little, often no motion, in the joint involved. (*e*) Interphalangeal flexion contracture. Unless the joint is flexed to an acute angle, little loss of function results except in occupations in which stretching and full extension of the fingers are necessary. True bony ankylosis in the fingers is uncommon [13] but it does occur. The stiffness is usually due to contracted joint capsule or tendon.

Fig. 9.—Attention is called to the humplike deformity on the back of the hand. There is flexion contracture at the metacarpophalangeal joints and distal interphalangeal joint of the index finger. Subluxation is present at the proximal interphalangeal joints of the second, third and fourth fingers.

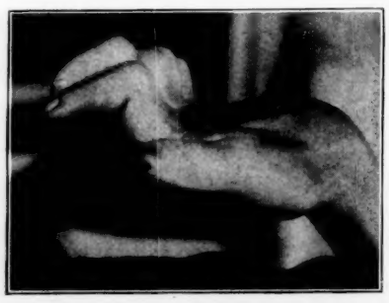

Fig. 10.—Hyperextension of the finger; marked flexion of the wrist.

Prevention here is carried out on the same principles as with larger joints. Steindler [14] has given, as the essentials of a useful hand, acute supination of the forearm, a wrist stable in dorsiflexion, flexion and extension of the fingers, apposition and adduction of the thumb. Consideration of these will be found most helpful in conserving function in the fingers and hand. A forward extension from the cock-up splint, used at night, will often prevent deformity of the fingers. This can be made to hold the fingers either flexed or extended. If the splint is used alternately with exercises during the day, the inflammation subsides more rapidly than if the fingers are immobilized all the time. Occupational therapy should be undertaken as soon as the soreness permits. Needlework, paper cutting, cord weaving or simple wood carving give adequate finger exercise. When deformities have developed, they can sometimes be corrected by traction, and here the banjo splint is simplest and most efficient. Adhesive strips on the dorsal and volar surfaces of the finger are the best means of applying traction. Plaster-of-paris splints may be made to correct the deformity gradually. Manipulation should always be followed by fixation for a few days in the corrected position until the soreness goes; then the same principles of prevention can be used. Numerous operations have been devised by Steindler,[15] Gill,[16] Lyle,[17] Bunnell,[18] Kanavel,[19] and others for the correction of old resistant deformities. Correction is possible to a small degree at any stage of the disease. Correction never compares with the results of prevention, in our experience. Early protection in good position, and rest, with light normal use, are the only measures to prevent deformity in arthritis.

372 Marlborough Street.

13. Risak, E.: Deutsche Ztschr. f. Chir. **211**: 1 (Aug.) 1928.
14. Steindler, A.: Surg. Gynec. Obst. **45**: 476 (Oct.) 1927.

BASIC (VITAMIN) FEEDING IN TUBERCULOSIS

PRELIMINARY REPORT *

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Advanced tuberculosis is again being approached from the standpoint of nutritional therapy. Recent studies from Sauerbruch's surgical clinic in Munich urge the curative value of a base-forming dietary low in sodium chloride, protein and carbohydrate and rich in fats and vitamins. This regimen, devised empirically by Gerson, is particularly worthy of critical consideration, coming as it does from a clinic which made distinctive contribution to thoracic surgery in tuberculosis. Sauerbruch, Baer and Herrmannsdorfer [1] maintain that inoperable bilateral cases of pulmonary tuberculosis may now be treated with thoracoplasty if the patients are first prepared by this dietary, thereby frequently clearing up the less diseased lung.

One of us (E. M.) has been privileged under the auspices of Mr. August Heckscher to visit Sauerbruch and Gerson's [2] clinic and to observe the dietary methods applied to their tuberculous patients in pavilion Y at the Munich clinic and at Bielefeld, Germany. Definite

15. Steindler, A.: New York M. J. **108**: 1117, 1928.
16. Gill, A. B.: Ann Surg. **68**: 55 (July) 1918.
17. Lyle, H. H. M.: Ann. Surg. **78**: 816 (Dec.) 1923.
18. Bunnell, S.: Surg. Gynec. Obst. **39**: 259 (Sept.) 1924.
19. Kanavel, A. B.: Splinting and Physiotherapy in Infections of the Hand, J. A. M. A. **83**: 1984 (Dec. 20) 1924.

* From the Northwoods Sanatorium, Saranac Lake, and the Fifth Avenue Hospital, New York, under a grant of August Heckscher, New York.

1. Sauerbruch, F., and Herrmannsdorfer, A.: München med. Wchnschr. **75**: 35 (Jan. 6) 1928. Gerson, M.; Sauerbruch, F., and Herrmannsdorfer, A.: Ibid. **73**: 47 (Jan. 8) 1926. Baer, G.; Herrmannsdorfer, A., and Kausch, H.: Kochsalz-frei Ernährung bei Lungentuberkulose. ibid. **76**: 21 (Jan. 4), 68 (Jan. 11) 1929.
2. Gerson (footnote 1, second reference).

healing was observed in advanced cases of lupus vulgaris [3] of the face and mucous membranes that had previously been resistant to all other accepted forms of treatment. These results seemed far more striking to us than those claimed for the other forms of tuberculosis, which included tuberculosis of the bones and joints, lymph nodes, lungs, peritoneum and genito-urinary tract, both with and without sinuses.

This visit and observation of cases stimulated sufficient interest on our part to lead us to subject a group of patients at Saranac Lake to the diet under the supervision of Frau Jungklaus of Bielefeld, who as dietitian had been previously administering it in the German clinics. Thirty patients with far advanced pulmonary tuberculosis were selected who had previously undergone all of the accepted therapy for two or three years but had failed to respond. Each patient was given a complete study, including physical examination, roentgenograms of the lungs and intestine, and blood and urine studies before and after the six month period of investigation. The patients were carefully supervised to prevent their partaking of any other food.

THE DIETARY

The nutritional requirements in advanced tuberculosis depend on the metabolic changes involved. The metabolic rate increases more in proportion to the toxemia than to the fever. The caloric requirement should cover that metabolism as well as the atrophy already induced by the disease. But excessive caloric intake burdens the pulmonary mechanism with additional oxygen-carbon dioxide exchange, thereby preventing functional rest. Accordingly the optimum caloric intake should be about 50 calories per kilogram.

The protein requirement is normally 0.75 Gm. per kilogram of body weight and in the wasting stages of tuberculosis should theoretically be increased. But such an increase would accelerate metabolism 37 per cent and hence prevent the desired pulmonary rest.

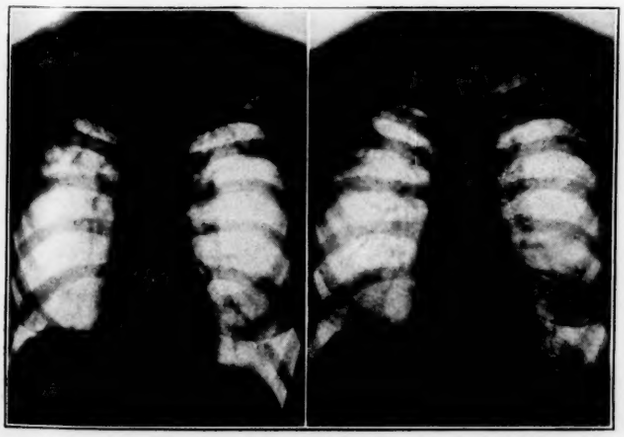

Fig. 1.—Appearance of lungs in case 10: *A*, before diet; *B*, after diet.

McCann and Barr found that on a 3,500 calory diet a daily intake of 100 Gm. of protein will maintain a tuberculous patient in positive nitrogen equilibrium. Many of the calories in this dietary are furnished by vitamin-bearing fats.

Obviously, fulfilling the caloric requirement is only a part of the nutritional function. The wasting in tuberculosis involves a parallel demineralization, for with the loss of tissue there is a corresponding loss of its inorganic constituents, calcium, magnesium, potassium, phosphorus and sulphur. These are supplanted by the dietary rich in base-forming salts. And since tuberculous processes involve excessive tissue hydration, sodium chloride is excluded. The German clinicians advancing this dietary have been confused about its acid-forming or base-forming value.[4] An analysis of the diet reveals definitely its base-forming nature. Attempts to increase the mineral intake have favored the addition of a mixture of inorganic compounds, 70 per cent of which contain calcium phosphate and lactate, with the formula presented in table 1. More critical analysis of this mixture reveals the fact that a number of the constituents are absorbed to such a slight extent in the alimentary tract that their effect on the acid-base equilibrium must be very slight. For example, the first constituent, potassium aluminum sulphate, is absorbed only in minute quantities, as is also the bismuth subnitrate and the strontium lactate. Therefore the evaluation of the acid-base effect as determined solely by chemical analysis cannot be carried over as such and applied to the body metabolism.

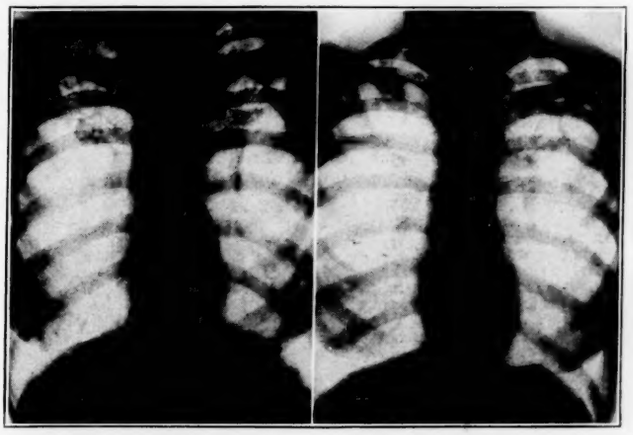

Fig. 2.—Appearance of lungs in case 16: *A*, before the administration of the diet; *B*, after the diet.

TABLE 1.—*Analysis of Mixture of Inorganic Compounds (According to Herrmannsdorfer)*

Chemical Compound	Formula	Milliequivalent		Excess	
		Base	Acid	Base	Acid
Potassium aluminum sulphate	$AlK(SO_4)_2$	11.61	11.61	.....	.....
Calcium phosphate	$CaHPO_4$	302.07	453.10	.....	151.03
Sodium silicate	Na_2SiO_3	14.09	14.09	.....	.....
Magnesium sulphate	$MgSO_4$	24.34	24.34	.....	.....
Sodium sulphate	Na_2SO_4	31.03	31.03	.....	.....
Bismuth subnitrate	$4BiONO_3BiO(OH)$	4.788	18.08	22.868	(Nitrate calculated as base)
Calcium lactate	$Ca(CH_3CHOH\,COO)_2$	324.44	.....	324.44	Lactic
Strontium lactate	$Sr\,(CH_3CHOH\,COO)_2$	7.35	.....	7.35	acid not computed
Albumin	$C_{72}H_{112}N_8SO_{22}$	.....	.....	.....	.....
Sodium acid sulphate	$NaHSO_4$	12.49	24.98	.....	12.49
Sodium bromide	$NaBr$	77.73	77.73	.....	.....
		828.018	636.88	354.658	163.52
		+191.138		+191.138	

In this study both the diet and the mineral mixture have been used in the same manner as suggested by the original exponents of the regimen in Germany, but full cognizance is taken of the factors discussed as to their limited absorption.

3. Bommer, S.: Ernährungtherapie der Haut-tuberkulose, München. med. Wchnschr. **75**: 1599 (Sept. 14) 1928.

4. Herrmannsdorfer: Beeinflussung der Wundheilung und der Tuberkulose durch Aenderung im Mineralstoffwechsel, Verhandl. d. Gesellsch. f. Verdauungs.- u. Stoffwechsel Kr., Oct. 13-16, 1926.

Attention is also called to the fact that this has been considered a low protein diet. As the average American diet is considered to contain 100 Gm. of protein, an intake of 92 could not well be regarded as particularly low.

One of the outstanding features of the dietary as presented in table 2, however, is its rich source of vitamins A to G. We now know that all nutritional requirements once met depend on the vitamin intake for their absorption and utilization in the body. Much of the dietary consists of raw food, and that which is cooked is abundant in vitamins. The vitamin promotes of this vitamin on the calcium absorption in the intestinal tract and its subsequent assimilation have clarified the understanding of the healing mechanism. McConkey [6] and Smith [7] observed the healing of intestinal tuberculous ulcers following the simple administration of cod liver oil and tomato juice—rich sources of vitamins A, B, C and D. In fact, Smith produced such ulcers in infected animals on diets deprived of these vitamins.

CLINICAL RESULTS

Two thirds of the patients were maintained on this dietary for six months, the others having been excluded

TABLE 2.—*Sample Diet for Tuberculous Patient for One Day* *

3,500 calories; 70 Kg.; 1 Gm. per kilogram of body weight; basic, 40 cc. Milliequivalents: protein, 11%, 92 Gm.; carbohydrate, 44%, 378 Gm.; fat, 45 %, 174 Gm.; calcium, 1.87 Gm.; sodium, 1.51 Gm.; phosphorus, 2.20 Gm.; chloride, 2.49 Gm.; iron, 0.041 Gm.

Food	Measure	Weight, Ounces	Protein	Carbohydrate	Fat	Calories	Calcium	Sodium	Phosphorus	Chloride	Iron	Acid	Base
7 a. m.													
Oatmeal	4 T	1⅔	8	33	4	205	0.03	0.03	0.20	0.03	0.002	5	..
Sugar	1 T	½	..	15	..	62	....	....	....	....	.....	..	..
Cream	2 T	1	1	1	12	118	0.03	0.01	0.02	0.02	0.0006	..	..
8 a. m.													
Br. tomatoes	1	3⅓	1	4	..	24	0.01	0.01	0.03	0.03	0.0004	..	6
Bread (stale)	1 sl	1	3	16	..	78	(0.002)	(0.12)	(0.05)	(0.18)	(0.0005)	2	..
Butter (sweet)	2 pats	⅔	..	..	17	159	0.003	....	0.003	....	0.00004	..	..
Cheese (cream)	1″ cube	½	4	..	5	65	0.14	0.09	0.10	0.13	0.0002	1	..
Honey	1 T	½	..	24	..	101	0.001	0.0002	0.003	0.004	0.0001	..	..
Milk	1 c	8	8	12	10	170	0.30	0.12	0.20	0.25	0.006	..	6
			25	105	48	982							
11 a. m.													
Lemon juice	½ c	4	..	10	..	40	0.03	0.01	0.01	0.0004	.....	..	5
Sugar	2 T	1	..	25	..	103	....	....	....	....	.....	..	..
Egg yolk	1	⅔	3	..	7	75	0.03	0.02	0.10	0.02	0.003	5	..
Butter	1 pat	⅓	..	..	9	77	0.003	....	0.003	....	0.00004	..	..
Crackers	2	½	2	11	1	64	0.003	(0.08)	0.02	(0.14)	0.0002	1	..
			5	46	17	359							
1 p. m.													
Vegetable soup	1 C	8	1	3	..	15	....	....	....	....	.....	..	..
Potato	1	5	4	31	..	146	0.02	0.03	0.09	0.06	0.002	..	11
Peas	Serv	3⅓	2	9	..	47	0.03	0.01	0.13	0.02	0.002	..	1
Carrots	Serv	3⅓	2	9	..	47	0.06	0.10	0.05	0.04	0.0006	..	11
Lettuce	Serv	1⅔	1	2	..	13	0.02	0.01	0.02	0.04	0.0003	..	4
Mayonnaise	1 T	½	..	..	11	100	....	....	....	....	.....	..	..
Bread	1 sl	1	3	16	..	78	(0.002)	(0.12)	(0.05)	(0.18)	(0.0005)	2	..
Butter	2 pats	⅔	..	..	17	159	0.003	....	0.003	....	0.00004	..	..
Milk	1 C	8	8	12	10	170	0.30	0.12	0.20	0.25	0.006	..	6
			21	82	38	775							
4 p. m.													
Cocoa	1 C	8	9	21	16	270	0.30	0.12	0.20	0.25	0.006	..	6
Bread	1 sl	1	3	16	..	78	(0.002)	(0.12)	(0.05)	(0.18)	(0.0005)	2	..
Butter	1 pat	⅓	..	..	9	77	0.003	....	0.003	....	0.00004	..	..
			12	40	25	425							
6 p. m.													
Rice	2 T	1	2	24	..	108	0.003	0.01	0.03	0.02	0.0003	2	..
Lettuce	Serv	1⅔	1	2	..	13	0.02	0.01	0.02	0.04	0.003	..	4
Cheese	1″ cube	½	4	..	5	65	0.14	0.09	0.10	0.13	0.0002	1	..
Bread	1 sl	1	3	16	..	78	(0.002)	(0.12)	(0.05)	(0.18)	(0.0005)	2	..
Butter	1 pat	⅓	..	..	9	77	0.003	....	0.003	....	0.00004	..	..
Milk	1 C	8	8	12	10	170	0.30	0.12	0.20	0.25	0.006	..	6
			18	54	24	521							
8 p. m.													
Oatmeal	4 T	1⅔	8	33	4	205	0.03	0.03	0.20	0.03	0.002	5	..
Sugar	1 T	½	..	15	..	62	....	....	....	....	.....	..	..
Cream	2 T	1	1	1	12	118	0.03	0.01	0.02	0.02	0.0006	..	..
Almonds		⅓	2	2	6	70	0.02	0.002	0.05	0.004	0.0004	..	1
			11	51	22	275							

* This diet represents the food intake of a patient for one day. Naturally it must be varied, but all other daily diets are made to approximate this one in total calories, distribution of protein, carbohydrates and fats, mineral constituents, base quality and vitamins. Meat is allowed to about 500 Gm. weekly. When patients partook of additional milk and fruit, the rest of the diet was adjusted so that the essential factors remained undisturbed. Cod liver oil, 1 tablespoonful with meals, was generally taken. The inorganic mineral mixture was taken in 1 teaspoonful doses after eating. A complete list of foods advised and forbidden is given by Bommer and by Herrmannsdorfer (footnotes 3 and 4).

vision in the food offered constitutes a specific advance in this form of dietary treatment of tuberculosis.

The application of these dietary features to tuberculosis has been appreciated in accordance with recent advances in experimental nutrition, concerning especially vitamins and their function. The past ten years revealed the effectiveness of ultraviolet energy in the healing of intestinal tuberculosis, the mechanism of which is related to vitamin D, the body product of ultraviolet irradiation.[5] Furthermore, the accelerating effect for various reasons. A summary of twenty cases is presented in table 3.[8] Two of the pulmonary cases showed complications of intestinal and laryngeal tuberculosis. In two a phrenicotomy or pneumothorax was done, which interfered with an accurate evaluation of the dietary factor alone.

The group studied showed a substantial gain in weight which it had been impossible to attain by pre-

5. Mayer, Edgar: Clinical Application of Sunlight and Artificial Radiation, Baltimore, Williams and Wilkins Company, 1927.

6. McConkey, M.: Address before the National Tuberculosis Association, May, 1929.

7. Smith, D. H.: Address before the National Tuberculosis Association, May, 1929.

8. Jesionek, A.: Dietary Treatment of Skin Tuberculosis, München med. Wchnschr. **76**: 867 (May 24) 1929.

TABLE 3.—*Clinical Observations Before and After Basic Feeding in Twenty Cases of Advanced Tuberculosis Observed Six Months**

Case	Name	Age	Temperature		Weight, Pounds		Sputum, Cc.		Results of Pulmonary Roentgen Examination	Results of Physical Examination	Comment	Weight, Gain or Loss
			Before	After	Before	After	Before	After				
1	S. S.	29	100	98.6	110	126	70	10	R. Infiltration throughout with multiple cavity formation	R. Definite improvement; cavities in lower half disappeared	Cough disappeared; fatigue lost; "indigestion" lost; chest pains ceased	+16
									L. Infiltration upper lobe	L. Slight improvement		
5	E. B.	24	99.2	98.6	95¾	109	50	20	R. Apex infiltration L. Pneumothorax 20%; fluid at base; cavity at first rib	R. Unchanged L. Pneumothorax discontinued in first month; definite improvement; cavity smaller	Intestinal tuberculosis with diarrhea symptoms cleared; first weight gain in 3 years; fatigue lost	+13¼
6	H. C.	24	98.6	98.6	106¾	106¼	150	50	R. Infiltration throughout; two large cavities	R. Phrenicotomy in second month; lower cavity smaller	Violent coughing spells disappeared; strength gained; phrenicotomy played a part	—½
									L. Infiltration upper half	L. Infiltration decreased		
7	A. R.	22	98.6	99.2	109	123½	30	20	R. Infiltration upper half	R. Slight improvement	Persistent weight loss checked; gained strength greatly; pneumothorax perhaps played a part	+14½
									L. Pneumothorax 60%; had been begun six months previously	L. No change		
8	F. S.	24	99 Occasional 99.8	98.6 Occasional 99	155½	160	40	5	R. Infiltration upper half	R. Clearing definite	Cough gone; hyperacidity cleared up	+4½
									L. Infiltration upper half	L. Clearing definite		
10	M. C.	32	98.6	98.6	108½	112¾	30	10	R. Infiltration upper half; double cavity formation	R. Improved; cavities smaller	Cough decreased; fatigue cleared; vomiting stopped	+4¼
									L. Infiltration upper half; cavity formation	L. Improved; cavity almost disappeared		
12	H. W.	28	98.8	99.6	85	90	140	70	R. Healed lesion upper third	R. No change	(Died in 3 months of tuberculous pneumonia)	+5
									L. Infiltration throughout; phrenicotomy three months previously	L. No change		
13	S. G.	28	99	99.4	110	106	33	?	R. Infiltration upper two thirds; cavity second rib	R. No change	Advanced laryngeal involvement; diet not tolerated; died four weeks after start of trial; dysphagia, disseminated tuberculosis	—4
									L. Infiltration upper half	L. No change		
15	M. G.	24	98.6	98.6	122	123½	20	20	R. Infiltration upper half	R. Slightly improved	.....	+1½
									L. Infiltration throughout	L. No change		
16	L. K.	24	99	98.6	98	98½	5	25	R. Infiltration upper half with small cavity	R. Improved; cavity almost gone	Intestinal tuberculosis treated previously by mercury vapor quartz light with diarrhea cleared up	+½
									L. Infiltration upper half with cavity	L. Improved		
17	J. L.	24	99.2	99.2	118½	115	15	15	R. Infiltration throughout	R. No change	Diet not well tolerated; objected to lack of salt	—3½
									L. Infiltration upper half	L. No change		
18	N. J.	30	99.5	98.6	121½	120	25	35	R. Infiltration upper half	R. Slightly improved	Hemorrhages necessitated pneumothorax; weight gain 8 pounds prior to hemoptysis	—1½
									L. Infiltration throughout with cavity	L. Pneumothorax after 3 months of diet		
20	C. L.	33	99	98.6	155	177	140	35	R. Infiltration upper third	R. No change	Admitted for treatment after previous appendectomy and thoracoplasty to increase weight	+22
									L. Thoracoplasty before admission; complete collapse of lung	L. No change		
21	I. G.	28	99.4	98.6	105¾	121	15	5	R. Infiltration upper half	R. Slightly improved	Much improved appetite and digestion	+15¼
									L. Infiltration upper half	L. Definite improvement		
22	M. R.	23	....	....	110	115	35	20	R. Infiltration upper half	R. Definitely improved	First weight gain in 3 years; lost a persistent marked weakness	+5
									L. Infiltration upper two thirds with multiple cavity formation	L. Definitely improved; cavities smaller		
23	M. B.	28	99	99.8	91	95	35	70	R. Infiltration throughout with cavity formation	R. No change	Great gain in strength	+4
									L. Infiltration upper two thirds with cavity formation	L. No change		
24	D. E.	25	98.6	98.6	113½	117½	25	15	R. Infiltration throughout with multilocular cavity formation	R. Slight clearing	Lost a persistent nausea and gastric distress	+4
									L. Infiltration upper half	L. Definitely improved		
25	D. G.	28	98.6	99.6	106½	112½	70	35	R. Infiltration upper half	R. No change	Diarrhea and intestinal tuberculosis improved (mercury vapor quartz light previously)	+6
									L. Infiltration throughout with cavity formation	L. No change		
26	M. X.	25	99.6	98.6	120½	129¾	35	20	R. Infiltration upper half	R. Definite improvement	Greatly improved appetite	+9¼
									L. Infiltration upper half with large cavity	L. Cavity smaller; clearing		
27	H. G.	22	99	99.4	121	121	105	90	R. Infiltration upper third	R. No change	No change even with phrenicotomy	0
									L. Infiltration throughout; phrenicotomy in first month	L. No change		

* Patients 2, 3, 4, 9, 14 and 19 (omitted from summary) discontinued the diet after one or two months.

vious procedures. Many of the alimentary disturbances, which had persisted on other diets, cleared rapidly with this regimen. The diet was well tolerated except in two instances. It was effective in diminishing fatigue and induced a sense of well being. The slight elevations of temperature disappeared in a few cases.

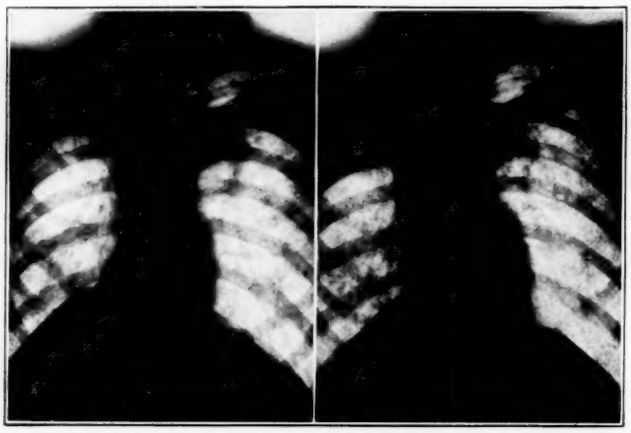

Fig. 3.—Involvement of lungs in case 17: *A*, before the diet was given; *B*, after the diet.

Physical and roentgen examinations of the chest showed in about one third of the cases definite clearing with an occasional contraction of a cavity. The other patients did not show any marked changes. The quantity of sputum diminished considerably in about half the cases, but in none did it become negative for tubercle bacilli. A few of the patients showed marked diminution of cough. Hemorrhages occurred in some during the experiment as well as before. Chest pains disappeared in a few who constantly complained of this symptom before. Two cases of intestinal tuberculosis which had resisted other therapeutic procedures cleared up clinically and the roentgen filling defects of the colon disappeared; one remained unchanged.

RESULTS OF CHEMICAL STUDY

Comparative studies of acid and base forming diets were made in two groups of twenty-three and twenty-five young albino rats weighing between 30 and 35 Gm. Litters of the same stock and age were maintained on natural foods—acid and base predominating in composition, in sunlight and in darkness during all the seasons. These experiments, conducted with the assistance of Miss Emma L. Samuel, have been in progress in the department of pediatric research of the Fifth Avenue Hospital for more than two years.[9]

1. *Blood Analyses.*—The dietaries had a marked effect on the animals, as indicated in table 4. The acid-forming diet depressed the serum phosphorus, alkali reserve, total base and p_H, with a compensatory rise in the chloride, sugar and cholesterol. The base-forming diet produced the converse changes with some depression in the serum calcium. The albumin-globulin ratios, fat percentage and iodine numbers of the fat were all normal. The hematologic data were also normal in both groups of animals.

2. *Histologic Examination of Bones.*—The animals fed on acid-forming diets developed rickets manifested by thoracic deformities, costochondral junction enlargements and long bones, which were small, soft and brittle. Histologically, the bones showed considerable osteoid tissue with little lime deposition, wide and irregular metaphyses and swollen cartilage cells. The rats fed on base-forming diets showed no thoracic deformities, but the ephiphyses were somewhat enlarged and the extremities were large and firm. Histologically, the bones showed some semblance to rickets: a moderate amount of osteoid tissue with some lime deposition in the metaphyses and cartilage. These observations are in accord with preliminary work of Shelling in Park's laboratory.

3. *Analysis of Bones.*—The animals on the base-forming diet showed the greater percentage of ash and heavier bones, while those on the acid-forming diet showed the smaller percentage of ash and lighter bones; the animals that had been exposed to light showed a higher ash content than those in darkness.

TABLE 4.—*The Chemical Composition of the Blood of Rats on Acid and Basic Diets*

	Inorganic						Organic							
Diet	Carbon Dioxide	p_H	Chloride	Phosphorus	Calcium	Total Base	Sugar	Cholesterol	Protein	Fat Iodine Number	n_D	Clotting Time	Hemoglobin	Red Blood Cells
Neutral	48	7.27	280	6.1	9.0	148	135	140	6.5	58	1.347	2.5	115	9.5
Base, sunlight	56	7.48	261	7.5	9.8	154	175	110	6.7	62	1.347	2.0	110	8.8
darkness	51	7.38	282	6.3	8.2	143	160	130	6.6	..	1.342	3.0	...	....
Acid, sunlight	48	7.28	305	5.7	11.8	137	150	150	6.9	51	1.345	3.0	105	10.9
darkness	44	7.23	317	6.0	11.3	134	144	142	7.1	..	1.344	2.0	...	....
Base-acid	51	7.33	353	3.8	10.0	142	140	120	6.7	55	1.347	3.5	110	10.2
Acid-base	49	7.38	320	4.6	9.7	150	145	137	6.7	63	1.345	2.5	102	8.6

4. *Metabolism.*—The rats on base-forming diets showed a more marked average gain in weight than those on the acid-forming diets (fig. 5). The weight contrast was striking for the summer, less so for the spring and none for the winter (fig. 6). Other metabolic properties which characterized each group of animals are summarized in table 5. The bones of the animals on the basic diet were large, well formed, round and thick, while those on the acid diet were small, thin and brittle.

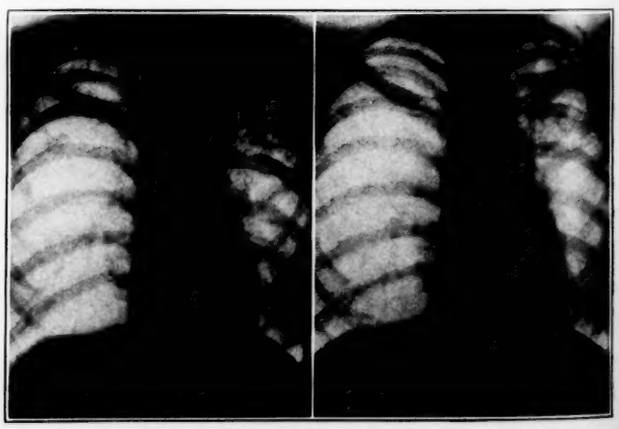

Fig. 4.—Condition of lungs in case 22: *A*, before diet; *B*, after diet.

9. Samuel, Emma L., and Kugelmass, I. N.: Comparative Studies of the Influence of Acid and Base Forming Diets on the Metabolism of Rats, Am. J. Dis. Child., to be published.

Similar studies were made on the blood of patients in the Northwood Sanatorium, maintained on the dietary. The base-forming diet produced a shift in the acid-base equilibrium toward the basic side of high norm, comparable to that shown by the rats. The total base and alkali reserve were definitely higher, while the chloride and cholesterol were low and the p_H and refractive indexes were within normal range (table 6).

COMMENT

We realize that a preliminary study of the value of a dietary in such a limited number of cases of far advanced pulmonary tuberculosis does not warrant a dogmatic statement. No acutely progressive, highly febrile cases were included. They constituted a group distinct from those of the German clinic, where more favorable results were observed. The difficulties of clinically controlling such a study are apparent, the only means being the selection of patients who failed to respond to accepted therapeutic measures for two or three years.

The favorable results in about one third of the patients studied for a period of six months of careful

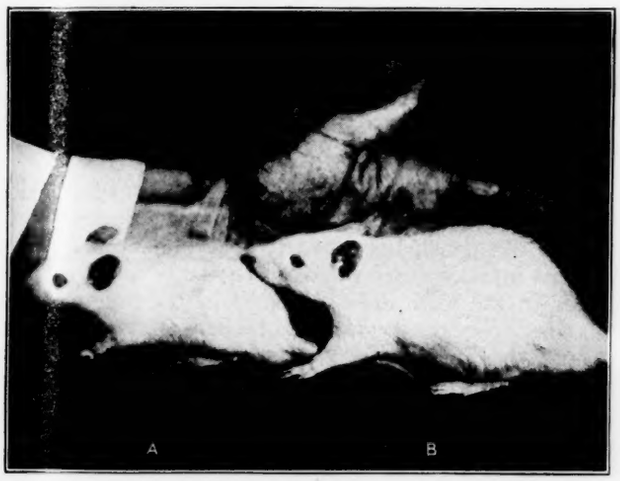

Fig. 5.—Comparative size of typical rats of the same age and litter fed *A* acid-forming and *B* base-forming diets.

supervision may perhaps be attributed to the effect of the dietary. But critical clinicians may justly maintain that contributory factors other than diet were operative in the end-result. The psychic element, the enforced rest, the occasional tendency of the disease to subside spontaneously, the wholesome food, its scrupulous preparation and careful cooking, and the individual service are factors that must be considered in a final analysis.

A study of the dietary shows that the nutritional requirements particularly effective in tuberculosis are the inorganic and the vitamin factors. Chemically there is a preponderance of alkali-forming over acid-forming salts. But the German clinicians attribute the value of the dietary to its acid-forming nature metabolically. We have no scientific evidence for such a contention. The addition of the mixture of inorganic mineral compounds consisting of base-forming salts certainly does not substantiate their opinion of an acid-forming mechanism in the body.

The experimental studies on the effect of acid and base forming dietaries in rats, in progress for two years, reveal distinct differences. The animals maintained on a base-forming dietary throve to a maximum degree, grew rapidly, gained weight readily, and were more active than those on the acid-forming diet, all other nutritional requirements having been equal. And blood studies of the acid-base equilibrium revealed shifts toward either the acid or the basic side, depending on the dietary given. Studies made on the blood of the

TABLE 5.—*The Metabolic Results in the Groups of Rats on Acid and Base Forming Diets*

	Acid (23 Rats)	Basic (25 Rats)
Weight: Summer	Average gain 7 Gm. a week (first 14 weeks)	Average gain 17 Gm. a week (first 14 weeks)
Winter	Average gain 8 Gm. a week (first 14 weeks)	Average gain 8 Gm. a week (first 14 weeks)
Spring	Average gain 11 Gm. a week (first 14 weeks)	Average gain 18 Gm. a week (first 14 weeks)
Skeleton	Bones small, brittle, rachitic (histologic)	Bones large, firm, nonrachitic (histologic)
Musculature	Flabby, rat posture poor	Tonicity good; posture characteristic
Fur	Shaggy, matty; growth patchy	Silky, soft; growth uniform
Activity	Mild	Vigorous; irritable
Appetite	Fair	Good
Stools	Small, hard	Large, soft
Infections	Rats susceptible early	Susceptible later
Reproduction	Delayed (26th week in spring group)	Normal (15th week)

patients before and after the dietary showed a similar shift toward the basic side of the acid-base mechanism.

We believe that the inorganic constituents, whether acid-forming or base-forming, are not as important as the vitamin content of the dietary. In fact, vitamin intake depends on base-forming foods which contain them in greatest amounts; e. g., milk, vegetables and fruits, the so-called protective foods. Both inorganic constituents and vitamins regulate cellular metabolism, and the absorption and utilization of minerals depend on the simultaneous presence of vitamins in the alimentary tract.[10]

We have not determined to what extent the effects obtained are to be attributed to the diminished sodium chloride intake or to the mineral mixture. The importance of these factors has been especially stressed

TABLE 6.—*The Average Chemical Content of the Blood of Seventeen Tuberculous Patients on the Dietary*

Time	p_H	Carbon Dioxide	Total Base (Milli-equivalent)	Chloride	Cholesterol	n_D
Before	7.48	46	138	340	180	1.344
After	7.45	55	152	280	130	1.344

by the German authors. The sodium chloride intake was kept at a minimum without quantitative regulation, merely by avoiding the addition of salt in the preparation or the use of the food. It has been stated that a neutral salt such as sodium chloride can prevent the lability of cellular metabolism so desirable in healing. It must yet be shown that the sodium and the chlorine ions weaken any chemical action of cells and that a reduction of the sodium chloride content by means of a salt-poor diet can enable the cells to counteract the tuberculous process.[8]

10. Kugelmass, I. N.: Clinical Nutrition, Philadelphia, J. B. Lippincott Company, 1929.

CONCLUSIONS

1. In a preliminary experiment, twenty patients between the ages of 22 and 33 years with far advanced pulmonary tuberculosis, who had failed to respond after two or three years of routine treatment, were maintained for six months on a special dietary regimen.

2. The average dietary consisted of 3,500 calories, base-forming, low in sodium chloride and in animal protein and carbohydrate, but rich in fats and in vitamins.

3. Eight patients gained substantially in weight; ten patients showed considerable diminution in the quantity of sputum but without loss of tubercle bacilli; four patients showed a loss of a slight constant fever, while two developed fever.

4. Eight patients showed definite clearing in the lungs by physical and roentgen examination; two patients with

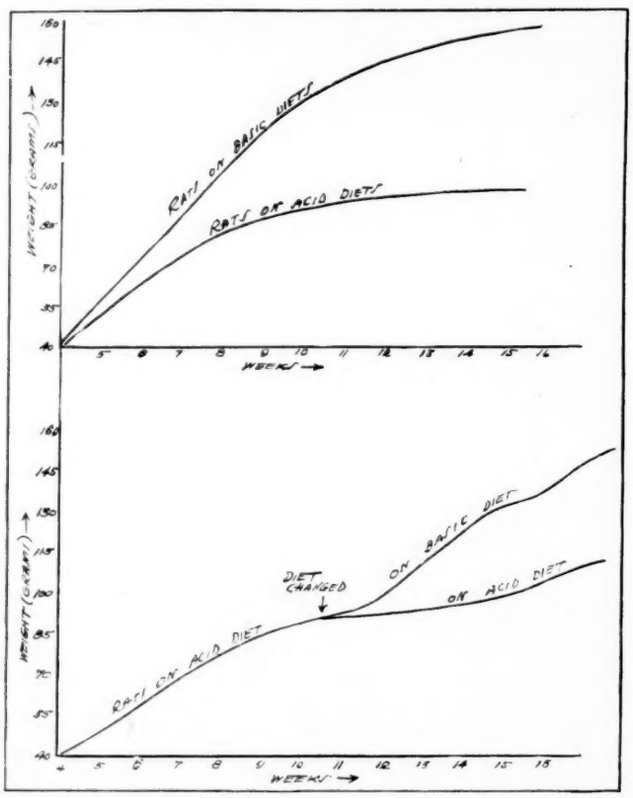

Fig. 6.—Group 1 (upper curves): Average weight curves of rats on acid and base forming diets. Group 2: Average weight curves during summer of rats, one litter of which was shifted to the base-forming diet.

intestinal tuberculosis lost the symptoms of this complication; one did not respond.

5. A diminution in fatigue, pains in the chest and alimentary disturbances was conspicuous.

6. The acid-base equilibrium of the patients studied before and after the dietary shifted toward the basic side. This result is in accord with similar studies made on rats maintained on acid-forming and base-forming diets, respectively.

108 Main Street.

Asthma and Hay-Fever.—It is estimated that from 3 to 5 per cent of the population of the United States suffers from asthma and hay-fever. Others present symptoms of allergy in the skin, gastro-intestinal tract and nervous system. Numerous investigators report positive allergic family histories in from 65 to 90 per cent of asthma and hay-fever cases.—Levin, S. J., *J. Michigan M. Soc.*, December, 1929.

CORTICAL ABSCESS OF THE KIDNEY*

CHARLES PIERRE MATHÉ, M.D.
SAN FRANCISCO

Nontuberculous abscess formation of the renal cortex due to its invasion by pus-producing organisms is of great interest to all doing kidney surgery because of the difficulty of diagnosis resulting from obscure clinical signs and lack of urinary symptoms. The acute hematogenous type secondary to foci usually located in the skin demands early diagnosis and operative treatment; the chronic type resulting from chronic pyelonephritis secondary to stasis in the urinary tract, although more insidious in its development, also requires early recognition and treatment. In making necropsies on patients dying from uremia resulting from prostatic obstruction and urethral stricture, I noted the frequency of abscess formation particularly in the cortex, which unquestionably hastened the demise of the patient. In performing nephropexies and other conservative operations on the kidney I have also observed cortical abscesses in all stages of formation and cicatrization, which in some instances were entirely unsuspected, having caused neither particular symptoms nor characteristic signs. These observations prompted me to make a study of the cases coming under my care, correlating their signs and symptoms for the purpose of facilitating their diagnosis in the future.

ETIOLOGY

The formation of abscesses in the cortex of the kidney is due to two distinct types of pathologic processes: (1) the focal hematogenous type secondary to staphylococcal infections elsewhere in the body usually manifested in the skin and sometimes in the prostate, and (2) the urogenous subacute or chronic type resulting from stasis in the urinary tract and associated with pyonephrosis, which is the end-result of pyelonephritis due to a mixture of colon bacilli and pus-producing organisms.

The hematogenous type, in which the original site of entrance of *Staphylococcus aureus* may be the skin, such as a furuncle, boil, carbuncle, felon or paronychia, has long been recognized and emphasized by Israel,[1] Jordan,[2] Busquet,[3] Jaffé,[4] Brewer,[5] Cunningham,[6] Eisenstaedt,[7] Kretschmer,[8] Boeckel,[9] Hyman[10] and many others. It often appears in kidneys in which no predisposing cause can be found as far as modern methods of diagnosis will permit; in others there is a history of former trauma, stone or tumor in the kidney

* From the Department of Urology, Saint Mary's Hospital.

* Read before the Section on Urology at the Eightieth Annual Session of the American Medical Association, Portland, Ore., July 10, 1929.

* Owing to lack of space, this article is abbreviated in THE JOURNAL by the omission of several illustrations. The complete article will appear in the Transactions of the Section and in the author's reprints.

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itself, or stasis due to obstructions in the upper and lower urinary tract. Hagner,[11] Brewer,[12] Squier [13] and Rehn [14] have emphasized the rôle of trauma and urinary stasis in reducing the resistance of the kidney, making it more susceptible to infection. The infecting organ-

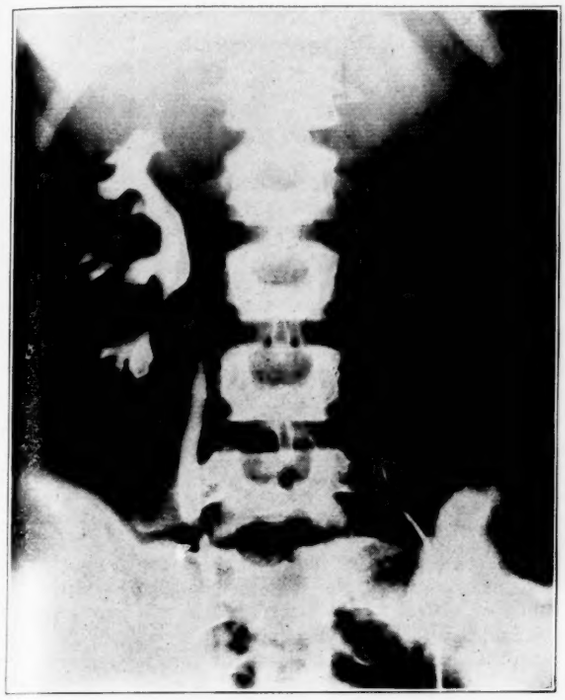

Fig. 2 (case 1).—Pyelogram of right kidney in dorsal position in a girl aged 13, presenting solitary abscess of kidney and perinephric abscess secondary to stye in the eye. Note lack of renal mobility in dorsal position and pressure defect of upper ureter.

isms have been identified in the original focus, in the blood stream and in the renal abscess, and the pathologic processes involved in the formation of cortical abscesses fully described. The organisms transmitted from the original focus lodge in an end artery of the kidney, usually the capillaries of the glomerulus in the cortex near the renal capsule, forming a circumscribed infection of the adjacent renal cortex resulting in necrosis, fibrous exudation and gangrene of the renal tissue. The entire circumscribed inflammatory area can develop into a suppurative slough, which usually extends toward the periphery and may extend through the renal capsule by way of the lymphatics (Stahr [15] and Wegloski [16]), or by actual necrosis, setting up a secondary perinephric abscess. The hematogenous type of cortical abscess is well exemplified by the following case:

CASE 1.—E. C., a girl, aged 13, a student, referred by Dr. Edward Topham, entered St. Mary's Hospital, Aug. 23, 1928, because of pain in the right lumbar region accompanied by nausea and vomiting, and followed by chills and fever. Two months before she had had a stye in the eye which was allowed to rupture spontaneously without surgical drainage. A plain roentgenogram demonstrated obscuration of the psoas muscle, convexity of the spinal column toward the affected side, and lack of normal renal mobility in the vertical position on the affected side. The ureteropyelogram was negative except for the fact that the upper portion of the ureter was misplaced mesiad.

Because of the history of a previous infection in the skin, a diagnosis of perinephric abscess possibly secondary to cortical abscess was made. Operation was performed, September 13, and when the kidney was being exposed an abscess was found ventrad to the lower pole containing about 120 cc. of thick purulent exudate containing numerous staphylococci. This abscess was apparently secondary to a solitary circumscribed abscess on the anterior surface of the lower pole of the kidney measuring 2.2 cm. in diameter (fig. 3). It was opened and sponged with 1 per cent mercurochrome, and both it and the perinephric abscess were widely drained. The temperature subsided and the patient made an uneventful recovery. She left the hospital, October 20, and has regained her health and strength.

The urogenous type is often associated with back pressure, such as urethral stricture, prostatic hypertrophy, median bar formation, bladder stone, movable kidney and ureteral stone, stricture or kink. The route of invasion is by the blood stream, the lymph channels or direct ascent from the bladder either by reverse peristalsis or by vesicorenal reflux. The pus-producing organisms lodge in the straight collecting tubules, where they become arrested, continue to grow, and set up infection commonly known as pyelonephritis, which extends to the minor and major calices.

As the pathologic process develops, bacteria take origin from the tubules, forming abscesses in the substance of the kidneys both in the interstitial tissue of the pyramid and in the glomeruli of the cortex. If the back pressure is not released by adequate early treatment consisting of surgical removal of the hypertrophied prostate, division of the median bar and dilation of the urethral stricture, these abscesses continue to develop, destroying the parenchyma of the kidney. Such an infection may continue to go on unrecognized and untreated and contributes greatly to the mortality in genito-urinary surgery. When it occurs in an advanced form in both kidneys or in a solitary kidney, it is fatal. This is well exemplified in the following case reports:

Fig. 3 (case 1).—Circumscribed abscess on anterior surface, lower pole of kidney, successfully relieved by surgical drainage.

CASE 2.—E. S., a man, aged 53, a cobbler, referred by Dr. Donald MacGedge, entered the hospital, Dec. 8, 1928, with complete urinary retention accompanied by fever, pain and swelling in the region of the right kidney. At the age of 37 he had had a nephrolithotomy for calculi in the left kidney; at 53 a lithotripsy for bladder stone was done; at 54, removal of a hypertrophied prostate and six months later left sided nephrectomy was done for pyonephrosis with recurrent stone formation in the kidney; and at 55 nephrolithotomy for calculus in the superior calix of the remaining kidney. In the interim he had passed several small stones and, for the reason that it was thought that the chronic pyelonephritis present in the right kidney was a great factor in

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15. Stahr, H.: Der Lymphapparat der Nieren, Arch. f. Anat. u. Entwcklngsgesch., 1900, p. 41.
16. Wegloski: Ueber perinephritsche und paranephritsche Abscesse, Polska gaz. lek. **4,** 1925, quoted by Chwalla (footnote 21).

stone formation in his case, renal lavage and dilation of the ureter were done at intervals for the purpose of reducing this infection and maintaining a wide passage in the right ureter.

December 7, he was suddenly taken with complete urinary retention, pain in the right lumbar region, chill followed by fever, and the appearance of a large mass in the right upper abdominal quadrant. A roentgenogram was made; on account of a large amount of gas in the intestine, no shadows suggestive of calculi were seen. The right ureter was catheterized and an obstruction was encountered 8 cm. from the orifice, which was finally passed, liberating approximately 180 cc. of purulent urine under pressure. Following this ureteral manipulation a stone measuring 6 mm. in diameter passed into the bladder and was removed by cystoscopic rongeur forceps. Although good drainage had been established, the enlarged right kidney did not recede in size and for this reason surgical intervention was made. The kidney, on being exposed, was found to contain numerous miliary cortical abscesses on its convex surface. These varied from 2 to 5 mm. in diameter and seemed to involve the entire kidney. We realized that we were dealing with sudden invasion of the cortex by an infection that had been present in the pelvis of the kidney over a period of years. The superficial abscesses were drained and little hope for recovery was entertained. A number of transfusions were given. However, the creatinine of the blood gradually climbed from 2.6 mm. to 6 mm. per hundred cubic centimeters and in two weeks' time the patient succumbed.

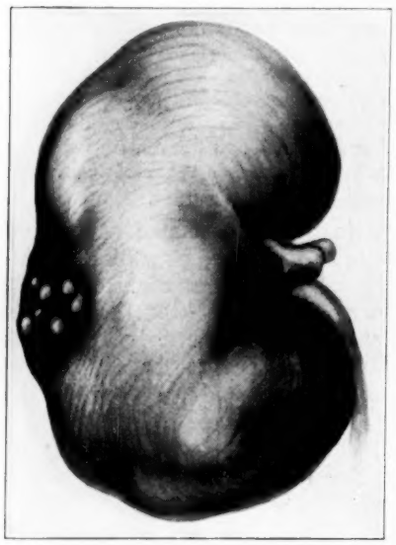

Fig. 4.—Multiple cortical abscesses limited to a pyramid found at operation in a kidney presenting ptosis in a woman, aged 37. Relieved by decapsulation and nephropexy.

This case is an example of the urogenous type of multiple cortical abscesses resulting from back pressure and due to involvement of the parenchyma of a kidney presenting long standing pyelonephritis. The stone in dropping into the lower ureter completely blocked it, causing acute back pressure in the kidney and infection involving the cortex. Had it not occurred in a solitary kidney, immediate nephrectomy would have saved the patient's life.

CASE 3.—L. F., a man, aged 57, an insurance broker, referred by Dr. P. A. Millar, entered the hospital, March 7, 1928, because of bilateral lumbar pain, fever, and difficulty in urination. For fifteen years the patient had had the symptoms of prostatism, which were progressive and for which he had not received any medical aid. Examination revealed an enlarged mass and tenderness in both upper abdominal quadrants, tenderness of the costovertebral angle, spasticity of the overlying musculature, and enlargement of the prostate gland with urinary retention. The blood Wassermann reaction was negative. Phenolsulphonphthalein was injected intramuscularly and 15 per cent of the dye recovered in two hours and ten minutes; 2.7 mm. of creatinine per hundred cubic centimeters was recovered from the blood. Pyonephrosis was suspected and, with the probability of finding unilateral involvement, cystoscopy was performed, March 3. Masses of pus cells, bacilli and staphylococci were recovered from both kidneys. After intravenous injection, indigo carmine appeared in eight minutes in the urine collected from the right kidney and in sixteen minutes in that collected from the left.

Because of the extreme prostration of the patient, a unilateral pyelogram was made, which revealed gross dilatation of the pelvis with blunting of the minor calices and huge dilatation and tortuosity of the ureter. In spite of drainage and lavage of the bladder and kidneys, the patient died. March 12, necropsy revealed prostatic hypertrophy consisting of hyperplasia of the median and lateral lobes, dilatation of the ureters and pelvis, and bilateral pyonephrosis and marked abscess formation of the renal cortex (fig. 11). Prior to the patient's last illness, yearly examinations of the urine by the insurance company for which he worked revealed marked infection of the urine, which was probably due to pyelonephritis resulting from stasis caused by an enlarged prostate. Either his resistance became suddenly lowered or urinary retention became more acute, and it is safe to assume that infection extended from the pelvis and pyramids of the kidney to the cortex of the kidneys, setting up numerous miliary abscesses, destroying the parenchyma of the kidney, and causing death.

CASE 4.—H., a man, aged 73, a broker, referred by Dr. Lillian Boldemann, entered the hospital, Sept. 13, 1928, because of frequency, urinary retention with dribbling, extreme weakness and malaise. Rectal examination revealed an enlarged prostate. A plain roentgenogram revealed a large vesical calculus. Both kidneys were seen to be much enlarged. There was no convexity of the spine, and the shadows of both psoas muscles were clearly seen. There was bulging and tenderness in both lumbar regions which extended anteriorly to the upper abdominal quadrants on both sides. Because of the retention over a long period of time the bladder was decompressed gradually and irrigated with antiseptic solutions. No dye was recovered in the phenosulphonphthalein tests and 7.1 mm. of creatine, 200 mm. of nonprotein nitrogen, and 120 mm. of urea nitrogen per hundred cubic centimeters were recovered from the blood. In spite of vesical drainage and lavage, the patient became gradually weaker and succumbed, October 16.

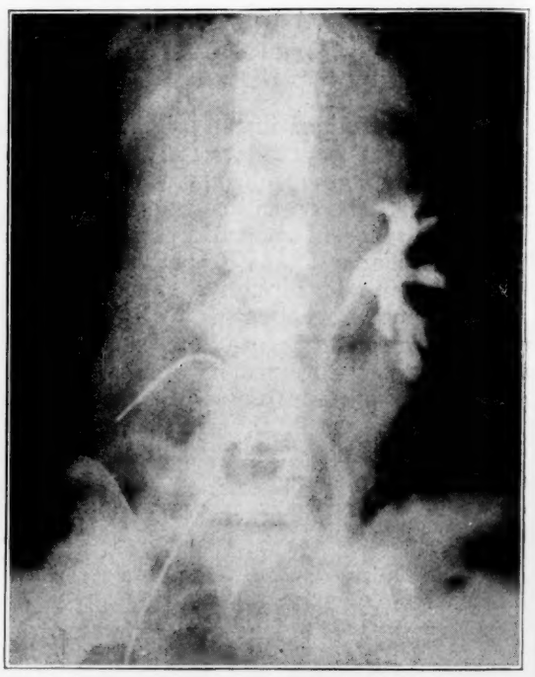

Fig. 5.—Pyelogram of left kidney in vertical position showing slight dilatation of ureter and pelvis secondary to stricture of lower ureter in a woman, aged 43, presenting chronic pyelonephritis of ten years' duration. Continual drainage and lavage failed to alleviate the symptoms.

Necropsy revealed enlargement of the prostate gland; a large vesical calculus, numerous diverticula of the bladder, hypertrophy of the bladder wall, dilatation of the ureters and enlargement of the kidneys (fig. 12). The left kidney was swollen, appeared grayish, and contained a congenital cyst on the upper pole and numerous small abscesses throughout the entire kidney substance, which were more marked in the cortex. The right kidney showed a similar condition, except

that on the convex surface of the lower pole there was a large cortical abscess measuring 4.5 cm. in diameter which extended posteriorly toward a huge perinephric abscess containing approximately 1,800 cc. of pus.

In this case there was the same pathologic process: stasis in the lower urinary tract, consisting of prostatic hypertrophy, back pressure and chronic pyelonephritis,

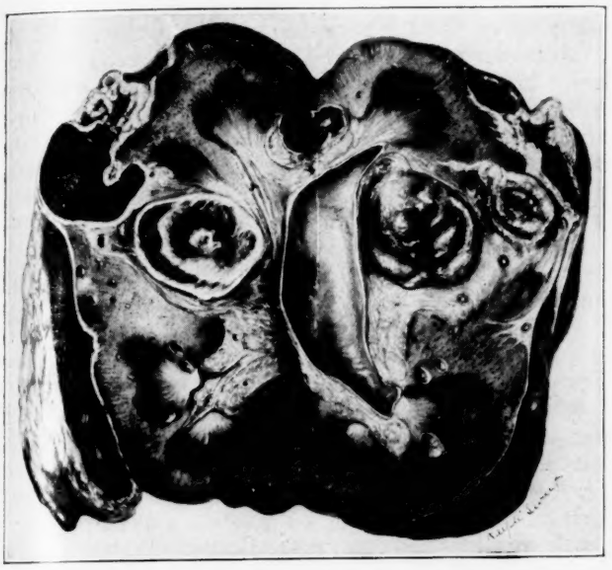

Fig. 6 (same case as figure 5).—Kidney removed at operation containing numerous cortical abscesses.

with invasion of the cortex of the kidney by pus-producing organisms producing numerous cortical abscesses with destruction of its functioning part, resulting in uremia and death.

CASE 5.—L. V., a Frenchman, aged 57, a pattern maker, referred by Dr. Carlos Lieva, entered the hospital, May 30, 1927, because of difficulty in urination, pain in the region of the bladder, and frequency. The patient presented a typical case of prostatic hypertrophy, and on June 6 a suprapubic prostatectomy was performed. Two weeks later, when everything was thought to be progressing nicely, the patient experienced a sudden chill followed by fever, pain, and tenderness in the left kidney region. A plain roentgenogram showed an enlarged left kidney. A pyelogram revealed dilatation and irregularity of the pelvis, calices and ureter. On account of thick pus being contained in the pelvis, the iodide solution was considerably thinned, reproducing a faint shadow. Continual drainage with urethral catheters failed to alleviate the symptoms and a diagnosis of pyonephrosis was made.

July 11, a left sided nephrectomy was performed and the kidney, removed at operation, presented numerous abscesses, in the medulla and the cortex. This case exemplifies the urogenous type of cortical abscess formation of the kidney as a result of obstruction in the lower urinary tract. The urethral catheter had apparently become suddenly plugged, causing temporary stasis, which was probably responsible for ascending infection of the kidney.

DIFFERENTIAL DIAGNOSIS

The diagnosis of the hematogenous type of cortical abscess may often be confused with influenza and with abdominal lesions, such as appendicitis, salpingitis, gallbladder disease and gastric ulcer. The urologist, however, quickly recognizes that there exists an inflammatory process involving the kidney and its fossa, but has considerable difficulty in distinguishing abscess formation of the cortex from acute pyelonephritis or from perinephric abscess. In both cortical abscess and perinephric abscess there is often a previous history of infection of the skin, such as furuncle, boil, felon, paronychia or carbuncle. In acute pyelonephritis the original focus of infection is more likely to be in the teeth, tonsils, sinuses, ear, prostate gland or respiratory tract. In all three lesions the patient is acutely ill. The infection may be ushered in by a chill followed by intermittent or continual fever. There is likewise progressive toxemia characterized by loss of weight and appetite, nausea, vomiting, malaise and asthenia, which are more or less common to all inflammatory processes. Leukocytosis is constant and varies from 14,000 to 36,000. In all three there may be pain in the involved lumbar region and anterior upper abdominal quadrant, tenderness in the costovertebral angle, bulbing or tumefaction of the affected side, and rigidity and spasticity of the overlying musculature. Likewise the roentgenogram is of little assistance in distinguishing acute pyelonephritis from cortical abscess.

If the abscess has attained considerable size, the primary and secondary calices may be elongated in that portion of the kidney; there may be a pressure defect in the pelvis or an irregular kidney outline. If the abscess has ruptured through into the pelvis, an irregular filling defect suggestive of necrosis might be seen. In perinephric abscess there may be obscuration of the psoas muscle, curvature of the spine with convexity away from the abscess, as recently emphasized by Beer,[17] Lipsett[18] and Peacock.[19] These signs, however, may be present in cortical abscess associated with extensive perinephritis or a concurrent secondary perinephric abscess. When the pyelogram is taken in the dorsal position, adhesions between the cortex of the kidney and the perinephric tissues often anchor the kidney in place, preventing normal mobility of that organ.

Fig. 7.—Kidney removed at operation showing urogenous type of multiple abscesses of renal cortex secondary to chronic pyelonephritis and renal calculus.

17. Beer, Edwin: Roentgenographic Evidence of Perinephric Abscess, J. A. M. A. **90**: 1375 (April 28) 1928.
18. Lipsett, P. J.: Roentgen-Ray Observations in Acute Perinephric Abscess, J. A. M. A. **90**: 1374 (April 28) 1928.
19. Peacock, A.: Perinephric Abscess, Surg. Gynec. Obst. **48**: 757 (June) 1929.

A careful analysis of the urine collected by ureteral catheterization is of value in differentiating cortical abscess from perinephric abscess and pyelonephritis. In pyelonephritis cellular casts, leukocytes and organisms are found in abundance and the bladder is likely to become infected early, giving the characteristic cystoscopic picture of cystitis and its clinical symptoms consisting of painful, burning and frequent urination. In other words, the extreme illness of the patient is commensurate with the urinary observations and urologic symptoms. In perinephric abscess, on the other hand, the urinary observations are such as one would encounter in any acute septic infection, such as pneumonia or typhoid. There is a slight trace of albumin, an occasional leukocyte and erythrocyte, and a few organisms usually of the pus-producing variety causing the infection. In other words, there is a relative paucity of

Fig. 12 (case 4).—Specimen removed at autopsy in a man, aged 73, suffering from urinary stasis caused by prostatic hypertrophy and bladder stone. Note multiple miliary abscesses in cortex of right kidney and huge solitary abscess of lower pole of left kidney, which communicated with a perinephritic abscess containing 1,500 cc. of pus.

urinary signs in proportion to the severity of the illness. In 1908, Chute [20] emphasized the fact that when small cortical abscesses invade the kidney the urine shows no turbidity and little pathologic change, which often leads to the erroneous conclusion that this organ is normal. As the cortical abscess develops there is likely to be an increase in urinary symptoms more or less in proportion to the amount of kidney involved (Chwalla [21]). In advanced cases the abscess may rupture into the pelvis, producing a shower of leukocytes and organisms in the urine.

20. Chute, A. L.: An Analysis of the Symptom in Forty Cases of Suppuration of the Kidney or Kidney Pelvis, Tr. Am. Urol. A. **2**: 199, 1908.

21. Chwalla, R.: Zur Klinik des paranephritischen Abscesses, Ztschr. f. urol. Chir. **23**: 339.

In the subacute or chronic urogenous type, abscess formation of the cortex is usually due to pyonephrosis, which is the end-result of chronic pyelonephritis resulting from stasis of the urinary tract. In these the symptoms are insidious and not particularly distinguishable from those of chronic pyelonephritis. The patient who had been previously experiencing difficulty in urination notes more or less marked lumbar pain and tenderness in the upper abdominal quadrants. When the abscesses are small and few in number, they are usually limited to a pyramid. They might be entirely overlooked and heal spontaneously, or be accidentally discovered by the surgeon in performing some conservative operation on the kidney. Mayo recently linked the deposit of calcium carbonate in the spontaneous healing of these cortical abscesses, which are in close proximity or connected with the renal capsule and produce confusing roentgenographic shadows resembling stone (fig. 8). When these abscesses suddenly increase in size and number, symptoms characteristic of the acute hematogenous type suddenly develop. They destroy the kidney and reduce its functioning power. When they are confined to one kidney, the patient can be saved by early nephrectomy and subsequent surgical removal of the predisposing cause of back pressure, be it a hypertrophied prostate, median bar or urethral stricture. When the condition is bilateral it unquestionably contributes to the mortality in genito-urinary surgery whether it is in the course of preparing the patient for operation or after surgical intervention has been made.

TREATMENT

Because of the peculiar pathologic process involved in the production of the hematogenous and urogenous types of abscess formation of the renal cortex, surgical intervention in order to be beneficial must naturally differ in the two cases. In the hematogenous type, infection commences in the glomerulus near the cortex and extends to the periphery of the kidney, and when intervention is made early conservative operations, such as decapsulation, incision and excision of the abscess, partial resection of the affected portion of the kidney will suffice to arrest the pathologic process and save the kidney. In the urogenous type, however, infection secondarily extends from the pelvis to the periphery, more or less involving and destroying the entire parenchyma; and, when intervention is made, radical nephrectomy is the only solution. The fact that abscesses tend to develop toward the periphery gives one an excellent opportunity of relief by early surgical intervention. When there is a single abscess or a few small ones, simple decapsulation and drainage will afford excellent results. This was noted by Cotton,[22] Mayo [23] and Chevassu.[24]

Decapsulation is particularly efficacious when the abscesses are limited to one pyramid. If the abscess is more extensive and particularly in cases of carbuncle, they should be incised or excised with the cautery. Resection of that portion of the kidney containing multiple abscesses was successfully employed by Woolsey [25] as early as 1900. In the acute septic kidney presenting unilateral hematogenous suppurative nephritis containing multiple abscess formation or septic infarcts, which

22. Cotton, F. J.: Acute Hematogenous Infection of the Kidney, Ann. Surg. **54**: 577, 1911.

23. Mayo, W. J.: Hematogenous Infections of the Kidney, J. A. M. A. **73**: 1023 (Oct. 4) 1919.

24. Chevassu, M.: Abcès miliares du rein, Proc. verb. mém. et dis. de l'Assn. française d'urologie **23**: 365, 1923.

25. Woolsey, G.: Multiple Septic Infarcts of the Right Kidney, Ann. Surg. **44**: 622, 1906.

was described by Brewer,[26] Cobb,[27] Cotton,[22] Cunningham and Graves,[28] and Baker,[29] it is necessary to perform nephrectomy in order to save the patient's life and in order to prevent the infection from involving the opposite kidney. If abscesses have involved a large portion of the kidney, nephrectomy is the treatment of choice. It has the advantage of being followed by fewer unpleasant complications.

The urogenous type is usually the end-result of subacute or chronic pyelonephritis. The infection has extended from the collecting tubules to the pelvis and has secondarily invaded the cortex after setting up an inflammatory process resulting in the formation of numerous abscesses which destroy the entire organ. It practically always demands nephrectomy. Unfortunately, it is sometimes bilateral (figs. 10, 11, 12 and 13) and sometimes occurs in a solitary kidney, in which event it is always fatal.

It is not within the scope of this paper to deal with inflammatory processes in the perinephric tissues. I might mention in passing, however, that perinephric abscess is often secondary to cortical abscess and should be widely drained. Perinephritis and perirenal sclerosis, recently described by O'Conor,[30] are best dealt with by decapsulation and resection of the sclerotic tissue. Paranephritis, inflammation of the fatty capsule, is best dealt with by wide dissection and removal of the fibrosed fatty tissue.

CONCLUSIONS

1. Cortical abscess formation of the kidney is of two types as a result of two distinct pathologic processes: (1) acute hematogenous, secondary to staphylococcal infections elsewhere in the body usually manifested in the skin, and (2) subacute or chronic urogenous, associated with pyelonephritis and secondary to former trauma, lesions in the kidney itself, and stasis in the upper and lower urinary tract.

2. The focal hemorrhagic type is often mistaken for influenza, abdominal lesions such as appendicitis, salpingitis, gallbladder disease, acute pyelonephritis and perinephric abscess. Its diagnosis cannot always be made correctly, but its presence can be strongly suspected by the history of a former skin infection. It is distinguished from pyelonephritis by the relative paucity of urinary symptoms in proportion to the severity of the illness, and by the fact that in cortical abscess the infecting staphylococcus is more likely to be found in the urine. The urogenous type is suspected when a patient presenting chronic pyelonephritis secondary to urinary stasis suddenly develops a chill and fever accompanied by pain and enlargement of the kidney which is unimproved by drainage with the ureteral catheter.

3. In the hematogenous type of cortical abscess formation the infection commences in the cortex near the kidney capsule and tends to extend toward the periphery. Early conservative operation, such as decapsulation, incision or excision of the abscess, was employed in twenty-four patients and saved the kidney from further destruction. Nephrectomy was employed for acute focal suppurative nephritis with abscesses of the cortex in nine cases; for carbuncle of the kidney, one case, and in two patients in whom incision and drainage were done too late. In the urogenous type, infection extends toward the periphery from the collecting tubules and pelvis, causing the formation of abscesses in the medulla as well as in the cortex and more or less destroying the entire parenchyma. The treatment is radical nephrectomy and was employed successfully in forty-three cases.

450 Sutter Street.

TABLE 1.—*Classification of Cortical Abscess Apropos of Treatment*

Hematogenous type:
1. Solitary circumscribed abscess.
2. Multiple abscess formation (usually from five to ten, limited to one pyramid).
3. Multiple miliary abscess formation. Suppurative nephritis more or less involving entire kidney.
4. Carbuncle.
Urogenous type:
1. Single usually also involving medulla.
2. Multiple miliary abscess formation involving pyramids and cortex.

TABLE 2.—*Enumeration of Cases with Method of Treatment*

	Number
Incision and Drainage:	
(*a*) Single circumscribed abscesses	5
(*b*) Few small abscesses	13
(*c*) Carbuncle	1
Excision of Abscess:	
(*a*) Single circumscribed abscess	2
(*b*) Few small abscesses	2
Nephrectomy:	
(*a*) Focal supperative nephritis	9
(*b*) Carbuncle	1
(*c*) Multiple miliary abscess of urogenous type secondary to former trauma, lesions in kidney or stasis	43
Total	78

ABSTRACT OF DISCUSSION

DR. F. H. BRUSH, Yakima, Wash.: Dr. Mathé has approached the subject from a peculiar angle, that of anatomy. He has given us some good points in the diagnosis of a condition which in the mild form is often overlooked. In the more serious form we are confronted with a more serious proposition, and the patient needs everything we can do to help him. In the treatment, if the patient is seen early, a moderate dissection is probably sufficient. In the carbuncle type of abscess I think a nephrectomy is necessary, in the same way that we treat a carbuncle occurring on the surface of the skin. It seems to me that the sooner we get rid of the necrotic material, the better it is for the condition of the patient, and economically it seems to me far better to sacrifice the kidney than to subject the patient to a second operation, when he will be in far worse condition than when first operated on. These abscesses of the kidney are rather common following urologic operations, and they are frequently overlooked. I think a mild type of fever occurs in urologic conditions, and probably a mild abscess develops, often with no abnormalities in the urine except the presence of staphylococci on the stained smear.

DR. H. G. BUGBEE, New York: I think that the most interesting phase of the subject is the single abscess in the cortex of the kidney. The author included carbuncle and multiple abscesses. The most interesting aspect is the question of diagnosis and then treatment. The diagnosis is most difficult. In carbuncle the pain and local tenderness are much more pronounced than in the cases of single abscess. In the multiple abscesses we are apt to find pus in the urine, which helps in the diagnosis. In the single abscess, diagnosis is often difficult. A patient with a single kidney had pain in the kidney region

26. Brewer, G. E.: Acute Unilateral Hematogenous Infections of the Kidney, Tr. Am. Surg. A. **26**: 341, 1908.
27. Cobb, F.: Acute Hematogenous Infection of One Kidney in Persons Apparently Well, Ann. Surg. **48**: 680, 1908.
28. Cunningham, J. H., and Graves, R. C.: Renal Infections, Surg. Gynec. Obst. **39**: 39 (July) 1924.
29. Baker, J. N.: Surgical Infections of the Kidney, J. Urology **7**: 307 (April) 1922.
30. O'Conor, V. J.: Perirenal Sclerosis (Chronic Cicatrizing Perinephritis), J. A. M. A. **85**: 1118 (Oct. 10) 1925.

and a persistent elevation of the temperature. There was no pus in the urine but the function was deficient. In view of the deficient function and of the fact that the patient had only the one kidney, we hesitated to operate, but after prolonged observation we finally made a diagnosis of abscess in the cortex that was not draining, and under local anesthesia we cut down on the kidney and evacuated the pus. The patient is doing well.

PROF. ALEXANDER VON LICHTENBERG, Berlin: This is one of the most important conditions in urology, because the indications for operation are not always clear. Very often the symptoms are circumscribed and there is merely local pain at the site of the kidney. In the presence of a great deal of pus it may happen that there is no fever, so that it is necessary in such circumstances that one be more radical and expose the kidney. These conditions may run a long, chronic course and then suddenly become so acute that they result fatally. I have found pyelographic changes valuable, especially an elongation of the calix. I noted that there were thirty-four nephrectomies in Dr. Mathé's statistics, but I believe it is possible in many cases of multiple abscess, especially those described as surgical kidneys, to save the kidneys. It is a startling picture to find the kidney enlarged to three or four times its normal size, much reddened and stippled with abscesses so that at times it is difficult for one not to remove it, but I have tried and succeeded with decapsulation and packing of the kidney and the surrounding area. The packing off for the drainage is accomplished by large Mikulicz pads at the upper and lower poles of the kidney. By this means the kidney is isolated from the surrounding tissues and structures. Only in the presence of thrombophlebitis is a nephrectomy performed in my work. I should like to differentiate clinically between those abscesses that are due to stasis as the result of stricture and stenosis and those due to other causes. A large number of cases are due to a prostatic stasis because of obstruction, and although in the earlier stages I was in the habit of letting those infections go that were due to prostatic involvement, in more recent years, when infection was present, I have exposed the kidney and either drained the abscesses or removed them, because especially in such cases the involvement of the kidney has been very severe. My observation has been that the solitary abscess involves either the upper or the lower pole and is always in women. I have never seen a case of genuine solitary abscess in a man, although the real carbuncle of the kidney is as common in men as in women.

DR. CHARLES P. MATHÉ, San Francisco: Dr. Bugbee calls attention to an important point in diagnosis; namely, that in advanced carbuncle and multiple abscess formation of the kidney the symptoms are much more severe and the patient is more likely to be septic. In those kidneys in which the abscess has increased considerably in size, it may encroach on the calices, causing a pressure defect of the pelvis, which can be demonstrated in making the pyelogram. This is well illustrated in one of my cases of carbuncle in which it was necessary to remove the kidney. I agree with Professor von Lichtenberg that single or solitary abscesses of the kidney always occur in women. In reviewing seven cases of solitary abscess reported in this series, I note that they all developed in women. The large number of nephrectomies reported in this series was due to the fact that many of the patients were seen too late. Earlier recognition and surgical intervention would have saved many of these kidneys, particularly those presenting cortical abscess of the hemorrhagic type. In the urogenous type, however, infection is secondary to stasis in the lower urinary tract and extends toward the periphery from the chronically infected pelvis, causing the formation of abscesses in the medulla as well as in the cortex, more or less destroying the entire parenchyma and always necessitating radical nephrectomy.

Syphilis and Nonunion of Fractures.—I am sure that syphilis, as a causative factor in nonunion, is greatly overestimated by the profession in general. There is no question but that it plays a very definite rôle, but there are hundreds of cases of normal union in definitely proved syphilitic patients. We see those every day in our hospital work on fractures, and it is only the rare cases that show any definite tendency toward nonunion.—Cotton, F. J.: Nonunion of Fractures of the Long Bones, *New England J. Med.*, November, 1929.

CEREALS AND RICKETS

II. ANTIRACHITIC ACTIVATION OF CEREALS *

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In 1923 when we succeeded in demonstrating for the first time that exposure of a rat's ration to ultraviolet radiation could make it growth-promoting and bone-calcifying, we foresaw the possibility of the commercial irradiation of foods. Scientifically, however, being primarily impressed with the desirability of securing an explanation why it was that in medical practice

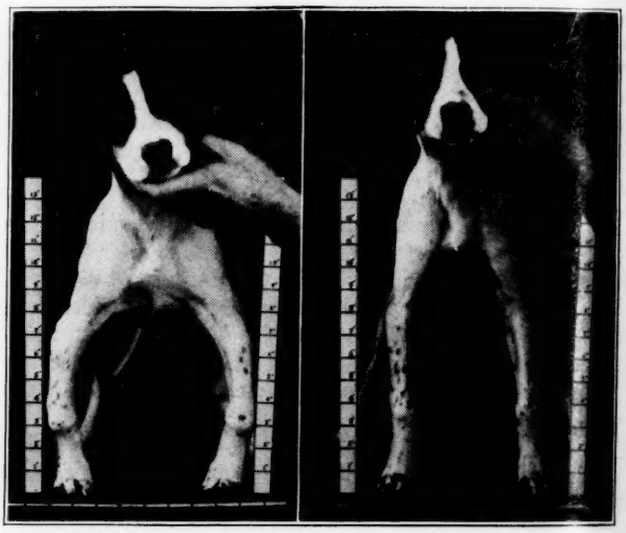

Fig. 1.—Two female dogs from the same litter, one of which, dog 54 (at left), received as the primary constituent of its ration 66.9 per cent of untreated oats, and the other, dog 55 (at right), the same oats which had been commercially irradiated. The remainder of the ration was composed of skimmed milk powder 20, casein 5, alfalfa 5, sodium chloride 1, and tricalcium phosphate 2.

identical results were secured by direct treatment of the patient with ultraviolet radiation and by the administration of cod liver oil, we soon found that the antirachitic activity in irradiated fats and cod liver oil was localized in the nonsaponifiable constituents. The reports of the experiments of Hess and his co-workers [1] followed ours [2] closely, and later he in cooperation with Windaus [3] and simultaneously with Rosenheim and Webster,[4] showed that a definite compound, ergosterol, is a substance in the nonsaponifiable fraction which is rendered potent by exposure to the ultraviolet rays. In

* From the Laboratory of Agricultural Chemistry, University of Wisconsin.

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1. Hess, A. F., and Weinstock, Mildred: Experiments on the Action of Light in Relation to Rickets, abstr. Am. J. Dis. Child. **28:** 517 (Oct.) 1924. Hess, A. F.: Science **60:** 269 (Sept. 19) 1924.

2. Steenbock, Harry; and Black, Archie: Fat Soluble Vitamins: XVII, J. Biol. Chem. **61:** 405 (Sept.) 1924. Steenbock, Harry: Science **60:** 224 (Sept. 5) 1924; U. S. patent 1680818, filed, June 30, 1924.

3. Windaus, A., and Hess, A. F.: Nacht. v. d. K. Ges. du Wissensch. zu Göttingen, Math. Physik. Klasse 175, 1926-1927.

4. Rosenheim, O., and Webster, T. A.: Biochem. J. **21:** 389, 1927.

other foods we have found that the relations are not so simple, as the extraction of their lipoids does not make them nonactivatable. Here, however, it is still possible that activation takes place through the medium of ergosterol, as we have found that the ergosterol may exist in combination with carbohydrates and other substances, some of which we [5] have succeeded in synthesizing in the laboratory.

Because in our early experiments the activated ration consisted largely of a cereal, namely, 84 per cent of hog millet, we surmised that the antirachitic

TABLE 1.—*Antirachitic Activation of Cereals and Its Stability to Cooking*

Cereals	Average Dry Weight of Femurs			Average Ash Weight (Femurs)			Average per Cent Ash (Femurs)		
	Untreated, Mg.	Irradiated, Mg.	Irradiated and Cooked, Mg.	Untreated, Mg.	Irradiated, Mg.	Irradiated and Cooked, Mg.	Untreated, per Cent	Irradiated, per Cent	Irradiated and Cooked, per Cent
Wheat.....	127	128	...	41	59	..	31.7	45.9	....
Patent flour.....	107	127	...	33	61	..	30.7	48.3	....
Cream of wheat.	112	135	...	31	62	..	27.6	46.1	....
Shredded wheat..	106	148	...	32	76	..	31.4	55.2	....
Corn meal.....	128	165	145	29	72	65	22.3	43.6	44.6
Corn flakes.....	121	135	122	32	58	52	26.7	43.1	42.8
Hominy.....	110	131	123	31	62	56	27.6	46.0	45.4
Rolled oats.....	122	158	168	33	73	70	26.8	45.9	41.7

activity was induced primarily in this component of the ration, especially because we had found salts and certain proteins nonactivatable, and because our casein had been highly purified and the salts had been taken from purified reagents. We soon found that this was the case.

With McCollum's [6] well known rickets-producing ration 3143 as a basis, we prepared a series of rations in most of which the 33 per cent of wheat was displaced by other cereals, treated or untreated, and fed them to rats for a period of five weeks. This gave these rations the following composition: cereal to be tested, 33 per cent; yellow corn, 33 per cent; gelatin, 15 per cent; wheat gluten, 15 per cent; calcium carbonate, 3 per cent; sodium chloride, 1 per cent. As the cereals submitted to test we used wheat, patent flour, shredded wheat biscuits, cream of wheat, whole corn meal, corn flakes, hominy and rolled oats. In part they were exposed to the radiation of a B. Y. type Cooper-Hewitt quartz mercury vapor lamp run at 95 volts for thirty minutes, with the cereal 24 inches distant from the lamp. To secure thorough exposure, the cereals were ground to a finely divided condition and spread 330 Gm. in a pan measuring 2 feet square. In addition, they were stirred every five minutes. In some instances, to determine the effect of excessive cooking and heating after irradiation, they were heated with water in an autoclave at 15 pounds pressure for thirty minutes and then dried at 60 C. for a few days. The rats used for the feeding tests were raised in our own laboratory to an age of from 24 to 31 days and a weight of 58 to 74 Gm. During the experiment they were kept three in a group, on pine shavings as litter. The rations were fed ad libitum and the animals were weighed weekly. After five weeks, the rats were killed and the ribs, radii and ulnae were examined for gross rachitic involvement. The femurs were dissected out from the fresh tissue and were then extracted with alcohol in a Soxhlet apparatus for a few days, dried and ashed.

The data on the results of these experiments, previously referred to,[7] are shown in table 1. They show that with the feeding of irradiated cereals the percentage of ash as well as the total ash in the femurs was almost doubled and their dried weight was likewise increased. Mellanby [8] obtained similar results with dogs. Cooking and drying did not have a destructive effect. It is to be added that the irradiated cereals also prevented enlargement of the costochondral junctions and widening of the epiphyseal lines. This difference in condition of the rats on the two preparations of cereals was evident in their behavior. Those receiving the irradiated cereal were far more active, struggling violently when caught; those fed on the nonirradiated cereals calmly acquiesced.

We were much impressed with the stability of the irradiated cereal to cooking and drying, which was not in harmony with what we knew of the stability of vitamin D in the unsaponifiable fraction of irradiated fats or cod liver oil. Since these early experiments, we have carried out many others. In one series, we irradiated rolled oats, spread out flake by flake, under a Cooper-Hewitt lamp, and stored samples of 300 Gm. each in Mason jars at temperatures ranging from 5 to 10 C. up to 45 and 60 C. for more than two years. The samples were tested periodically for antirachitic potency by feeding them to rats which had been made rachitic on our [9] ration 2965. In this ration, consisting of 76 per cent yellow corn, 20 per cent wheat gluten, 3 per cent calcium carbonate and 1 per cent sodium chloride, 20 per cent of the yellow corn was displaced by the irradiated cereals. This substitution was made after the rats had been on ration 2965 for about three and a half weeks, by which time they had developed severe rickets as revealed by the enlargement of the wrists and by their peculiar shambling gait. After ten days on the modified ration, the rats were killed and the distal ends of the radii and ulnae were examined for the linear deposition of calcium in their metaphyses. This was done by means of the Johns Hopkins technic.[10]

TABLE 2.—*Permanence of Vitamin D in Irradiated Rolled Oats with Storage* *

Storage Conditions		Length of Period of Storage			
	Temperature	6 Months	16 Months	23 Months	28 Months
Refrigerator.....	5-10 C.	++	++++	+++	++
Room temperature	20-25 C.				
In daylight.....	.....	+++++	+++	++	++†
In dark.....	.....	++++	+++	++	++
Incubator.....	35 C.	+++++	+++	?	+†
Drying room.....	45-60 C.	+++	+++	—	+

* Key to table: —, wide rachitic metaphysis; ?, traces of calcification; +, narrow line; ++, medium line or medium metaphysis; +++, wide line or narrow metaphysis; ++++, almost complete healing; +++++, complete healing.

† Length of period of storage was only twenty-five months.

The data presented in table 2 show a pronounced residual antirachitic potency in the rolled oats after sixteen months' storage, irrespective of the conditions,

5. Unpublished data.

6. McCollum, E. V.; Simmonds, Nina; Shipley, P. G., and Park, E. A.: J. Biol. Chem. **47**: 507 (June) 1921.

7. Steenbock, Harry; and Daniels, Amy: Irradiated Foods and Irradiated Organic Compounds: Therapeutic Possibilities, J. A. M. A. **84**: 1093 (April 11) 1925; footnote 2, third reference.

8. Mellanby, E.: British Medical Research Council, Special Report Series 93, 1925.

9. Steenbock, Harry; and Black, Archie: J. Biol. Chem. **64**: 263 (June) 1925.

10. McCollum, E. V.; Simmonds, Nina; Shipley, P. G., and Park, E. A.: J. Biol. Chem. **51**: 41 (March) 1922.

hot or cold, light or dark; but after from twenty-three to twenty-eight months the activity was practically entirely destroyed at the higher temperatures. This result was not unexpected because the samples kept at the higher temperature even after six months' storage had a strong odor and taste, making them entirely unsuitable for human consumption. The samples stored at room temperature were entirely palatable. The rolled oats used for these tests had undoubtedly been endowed with an excess of antirachitic activity above that necessary to produce a positive antirachitic reaction in our animals. However, we have repeatedly found that from 2 to 5 Gm. of rolled oats ground to an impalpable powder and then irradiated to a maximum degree of antirachitic potency will just give a narrow or medium line of calcium deposits in the radii and

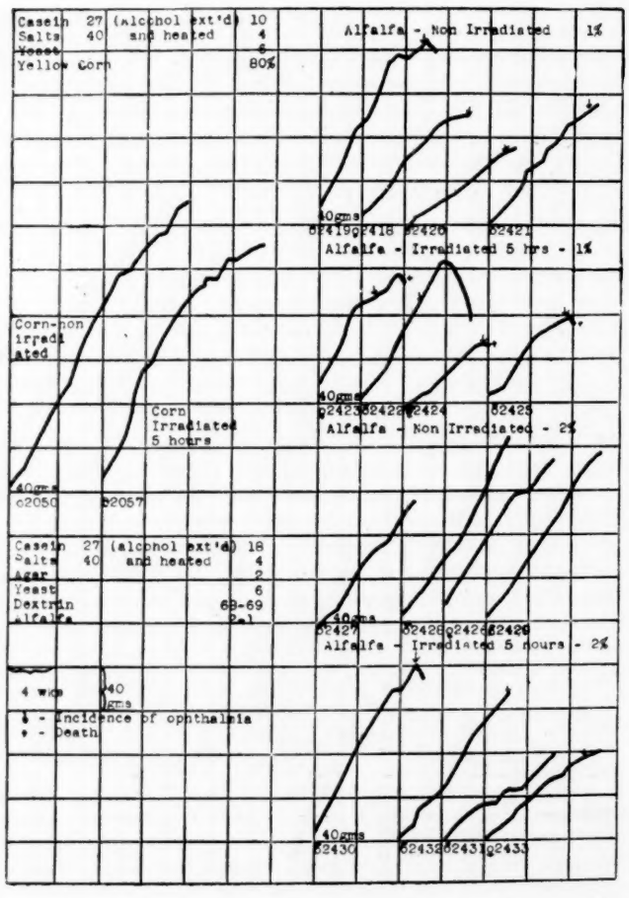

Fig. 2.—Effect of irradiation on vitamin A.

ulnae. Irradiating rolled oats in the flake condition instead, as carried out in the aforementioned experiments, resulted in the impartation of a much lower degree of potency. We are therefore inclined to believe that the activity revealed in our tests six months after irradiation was probably what we would have observed if the facilities had allowed us to make the tests immediately after treatment.

The potency of ultraviolet radiation in producing various effects, such as the destruction of enzymes, the active principles of serums, coagulation of proteins, bleaching of pigments and a general abiotic reaction, are too well known for comment. However, the question whether any of these effects accompany or are even the result of destruction of vitamins was an important one to raise in connection with cereal irradiation.

We [11] soon found that vitamin A is remarkably stable although it was not to be denied that, with excessive exposure outside of what was necessary to produce activation, destruction occurred. Willimott and Wokes [12] found complete destruction of vitamin A in fats with exposure to a quartz mercury vapor lamp for two hours at a distance of 3 inches. In cod liver oil they found that destruction progressed even after irradiation ceased. However, they depended entirely on color reactions for their evidence. Supplee and Dow [13] reported that milk irradiated in either the dry or the liquid form for short periods under suitable conditions does not show any evidence of vitamin A destruction or other toxic effects. Titus, Hughes, Hinshaw and Fitch [14] demonstrated with chickens that irradiation of fresh whole milk made it antirachitically active but destroyed vitamin A. Zilva [15] found vitamin A in fats destroyed by ultraviolet rays in the presence of air but not in the presence of carbon dioxide. Ozone was shown to be destructive of vitamin A in cod liver oil. Peacock [16] exposed cod liver oil to white light and found that vitamin A was permanently destroyed. Holmes and Pigott [17] demonstrated that vitamin A in cod liver oil was destroyed by sunlight. Contrary to Zilva, Spinka [18] believes that vitamin A is not destroyed but that toxins are formed by the action of ultraviolet rays on butter fat. Drummond [19] has been reported as sounding a word of warning in regard to the destruction of vitamin A by irradiating milk. Williams [20] asserted that the antineuritic factor in aqueous yeast extract was destroyed by ultraviolet treatment. Spinka [21] reported that vitamin B in yeast was not destroyed. Zilva [22] found that the antineuritic factor in yeast extract was not destroyed and growth was induced in rats on such extracts. Hogan and Hunter [23] found vitamin B carriers inadequate to produce growth after exposure to ultraviolet rays for ten hours but found them still active as antineuritic agents. Chick and Roscoe [24] made an attempt to confirm the observations of Hogan but found that the antineuritic as well as the heat stable factor in the vitamin B complex was affected by ultraviolet treatment, the antineuritic being affected least. Kennedy and Palmer [25] concluded that it is probable that irradiating and autoclaving impair in varying degrees both vitamin B and vitamin G, but their experiment demonstrated only a slight effect of irradiation on the growth-promoting property of yeast.

Reyher and Meller [26] found vitamin C in milk destroyed. Spinka [27] did not find vitamin C destroyed

11. Steenbock, Harry; and Coward, K. H.: J. Biol. Chem. **72**: 765 (April) 1927.
12. Willimott, S. G., and Wokes, F.: Lancet **2**: 8 (July 2) 1927; Pharm. J. **118**: 217 (Feb. 26) 1927.
13. Supplee, G. C., and Dow, O. D.: J. Biol. Chem. **75**: 227 (Oct.) 1927.
14. Titus, R. W.; Hughes, J. S.; Hinshaw, W. R., and Fitch, J. B.: J. Indust. & Engin. Chem. **18**: 843, 1926.
15. Zilva, S. S.: Biochem. J. **13**: 164, 1919; **14**: 740, 1920; **155**: 333, 1925.
16. Peacock, P. R.: Lancet **2**: 328 (Aug. 14) 1926.
17. Holmes, A. D., and Pigott, M. G.: Boston M. & S. J. **195**: 263 (Aug. 5) 1926.
18. Spinka, J.: Chemicke Listy **17**, numbers 8 and 10, 1923, from Ber. d. ges. Physiol. **26**: 189, 1924; Biochem. Ztschr. **153**: 197, 1924.
19. Drummond, J. C., cited in The Danger of Irradiating Milk, London Letter, J. A. M. A. **88**: 1014 (March 26) 1927.
20. Williams, R. R.: Science **60**: 498, 1924.
21. Spinka, J.: Biochem. Ztschr. **153**: 218, 1924.
22. Zilva (footnote 15, first reference).
23. Hogan, A. G., and Hunter, J. E.: J. Biol. Chem. **78**: 433 (July) 1928.
24. Chick, H., and Roscoe, M. H.: Biochem. J. **23**: 504, 1929.
25. Kennedy, Cornelia; and Palmer, L. S.: J. Biol. Chem. **83**: 493 (Sept.) 1929.
26. Reyher, P., and Meller, B.: Klin. Wchnschr. **5**: 2341 (Dec. 10) 1926.
27. Spinka, J.: Biochem. Ztschr. **153**: 231, 1924.

in lemon juice. Zilva [22] did not observe any destruction in lemon juice.

It stands to reason that many different results were obtained by different investigators because of the different mediums in which the stability of the vitamins was determined. Furthermore, there also appears to be a general paucity of knowledge in regard to the generation and the properties of ultraviolet radiation, not to mention the widespread difference in the technic of demonstrating the presence of vitamins by animal experimentation.

We have not carried out any experiments for testing the stability of vitamin C, primarily because this vitamin is not found in the cereal grains and therefore in this connection is of no immediate interest. We did, however, put to test vitamins A and B, referring to the latter as the complex of the antineuritic and the antipellagric, both of which are essential for normal growth. For the vitamin A experiments we used corn and alfalfa, both ground to an impalpable powder in a ball mill and then sifted into a pan, making as thin a layer as possible. Irradiation was carried out for a period of five hours. Rats were used as the experimental animals. They were of our laboratory, black and white piebald stock, raised to an age of approximately 24 days. Four rats were used in each group. As corn contains little excess of vitamin A over that required by the rat for growth, it was fed in the maximum quantity possible, namely, 80 per cent of the entire ration. To supplement it, so as to make it otherwise satisfactory for growth, there was added casein, and our [28] salt mixture 40. As we had no knowledge relating to the stability of the vitamin B complex, we added yeast. The alfalfa was fed at a level of 1 to 2 per cent of the entire ration. This was known to furnish no excess of vitamin A. Agar was added in order to furnish roughage. The bulk of the ration was made up of dextrin. For control purposes, nonirradiated corn and alfalfa were fed in equal amounts to similar groups of rats, which were irradiated ten minutes on alternate days to provide a sufficiency of vitamin D.

Representative data of the results obtained—growth and the incidence of ophthalmia being used as criteria, are shown in figure 2. They reveal that vitamin A was not destroyed in yellow corn to an extent sufficient to allow detection. In the alfalfa experiments the levels of intake of vitamin A on the untreated material were so low that the incidence of ophthalmia and complete failure were not avoided. Slight destruction was therefore readily revealed. As the incidence of ophthalmia on 1 per cent of untreated alfalfa occurred after the same lapse of time as on 2 per cent irradiated alfalfa, we are inclined to believe that practically half of the total vitamin was destroyed. This looks like a high degree of destruction; but when it is remembered that the materials were ground to an impalpable powder and that they were irradiated not only sufficiently to secure maximum activation but to such an extensive degree as to exceed the time necessary to produce complete activation by at least tenfold, it is to be concluded that vitamin A in these materials has a remarkable degree of stability. From the practical standpoint, reference must also be made to the fact that it undoubtedly is far from desirable to impart even the maximum degree of potency attainable.

The vitamin B experiments, the results of which are shown in figure 3, are equally conclusive. With the use of a critical level of intake of the vitamin B complex in the form of 3 per cent of yeast or 30 per cent of yellow corn, five hours' irradiation did not produce any effect, unless the slightly reduced rate of growth with irradiated corn is to be taken as a suggestion of slight destruction. In the absence of confirmatory evidence, the slower rate of growth of these animals cannot be assumed to have a special significance, because such differences in rate of growth are frequently observed in different groups on the same rations. Here then, as in the case of vitamin A, we have every reason to believe that antirachitic activation of plant tissue by exposure to ultraviolet radiation does not have a deleterious effect.

Besides the problem of the destruction of the vitamins, a matter of primary concern in the irradiation of human foods is the change in palatability. Many

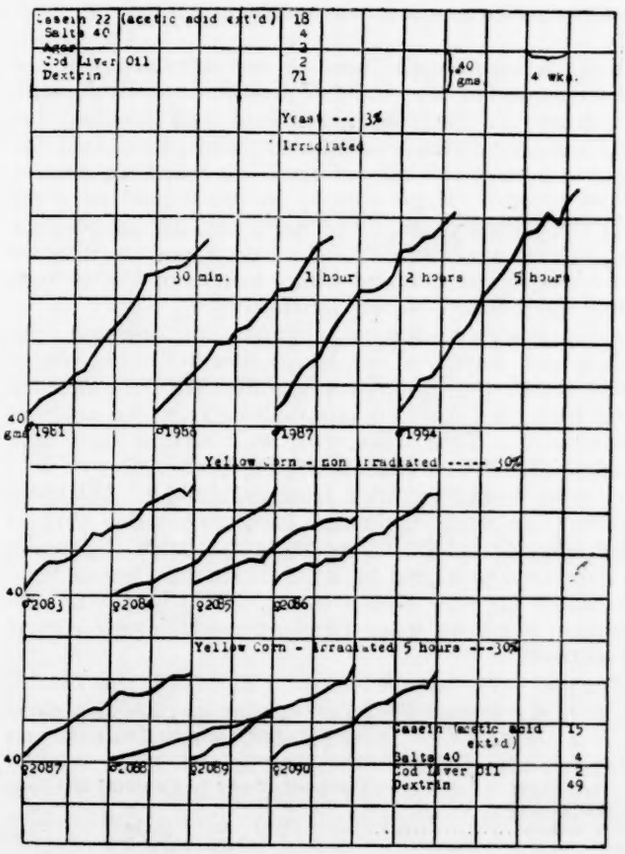

Fig. 3.—Effect of irradiation on vitamin B.

proteins, fats and carbohydrates of an ordinary state of purity can be changed in taste by exposure to ultraviolet radiation, and this effect we [5] have shown cannot be prevented by carrying out the process in inert gases, in vacuo or at low temperatures. Nor can the offending substances produced be removed by aeration. They are apparently of a stable nonvolatile nature, and in fats their presence frequently catalyzes undesirable secondary reactions. These changes have been frequently pointed to as militating against the general adoption of food irradiation. In fact, the inability to prevent these changes in the sterilization of milk has led to numerous modifications of the process, and its ultimate abandonment for practical purposes. Fortunately for antirachitic activation it is not necessary to use intense or prolonged exposures. Short exposures at high intensity or long exposures at low intensity do not

28. Steenbock, Harry; and Nelson, E. M.: J. Biol. Chem. **56**: 355 (June) 1923.

cause these changes, although decided antirachitic activation can be induced.

In our early experiments we used the longer exposures to insure maximum activation, but we soon found that we could reduce the time materially without lessening the activity imparted. With moderate intensity of ultraviolet radiation, such as is generated by the B. Y. Cooper Hewitt or the Hanovia Alpine Sun Lamp, acting on rolled oats, we got percentages of ash in rat femurs of 37, 43, 46, 47 and 48, respectively, with exposures of one-fourth, one-half, one minute, five and fifteen minutes. Unexposed rolled oats, by way of contrast, produced 50 per cent less ash than any of those treated. Exposures up to one minute gave the highest efficiency, and these, moreover, did not produce any change in palatability. We have found an exposure of a fraction of a second with a battery of quartz mercury vapor lamps entirely satisfactory.

TABLE 3.—*Measurement of the Antirachitic Potency of Commercially Irradiated Rolled Oats When Fed as Such and When Fed Diluted with Untreated Oats* *

	Irradiated	Diluted 1:3	Diluted 1:7	Diluted 1:13	Untreated
Weight of femurs (Gm.).	0.138	0.137	0.124	0.119	0.106
Ash in femurs (Gm.).....	0.065	0.060	0.049	0.040	0.033
Ash in femurs (per cent).	47.3	43.8	39.5	31.4	31.6
Gain in weight (Gm.).....	25.8	30.2	24.8	27.5	16.2

* These values represent averages obtained on four rats.

We made numerous attempts to measure the ultraviolet output of our lamps chemically and photoelectrically, but, after considerable effort, concluded that these methods were unpromising from the practical standpoint. Even when used with screens they have little selectivity for the activating region because this we have found to range from only 240 to 313 millimicrons in wavelength, and furthermore this part of the spectral radiation represents too small a fraction of the total produced by a quartz mercury vapor lamp to allow accurate measurement. In all of our subsequent work we have therefore used biologic control exclusively.

TABLE 4.—*Antirachitic Effect of Commercially Irradiated Versus Nonirradiated Rolled Oats on Dogs*

	Untreated	Irradiated	Untreated	Irradiated
Litter number	8	8	9	9
Dog number	47	48	54	55
Sex	♂	♂	♀	♀
Initial age, days.....	44	44	42	42
Days on experiment.....	149	147	70	70
Initial weight, Gm.	1,740	1,765	2,235	2,355
Gain in weight, Gm.	8,280	10,485	6,165	5,530
Average daily feed consumption, Gm.	296	306	259	259
First clinical rickets, week....	4th	None	4th	None
Serum calcium, mg. per 100 Cc.	15.9	17.3	11.1	17.3
Serum phosphorus, mg. per 100 Cc.	5.0	7.9	7.7	10.9
Ash fifth ribs, per cent.....	30.9	45.1	29.1	39.3

In table 3 are shown data of irradiated rolled oats 43 A, prepared commercially by the Quaker Oats Company. We suspected that this was endowed with more activity than necessary for the maximum degree of calcification, so we diluted it with 3, 7 and 13 parts of untreated cereal, respectively, and also fed untreated oats exclusively as a control. The technic used was approximately the same as already described. Rats were started at approximately 50 Gm. in weight, one rat from each of four litters being placed on each ration, on which it was continued for five weeks. The sexes were distributed as uniformly as possible, two males and two females were put on each ration, except on the undiluted irradiated oats, and the irradiated oats diluted 1 to 3, where there were three females and one male. At the end of five weeks the femurs were removed and analyzed for ash in duplicate. Ration 2965 was fed, with rolled oats substituted for the yellow corn. To eliminate differences due to variation in consumption, the food given was limited from day to day, and adjusted to the amount consumed by the animal with the smallest appetite. This, of course, was only approximately possible. For the five week period our records show that the consumption for the undiluted, diluted 1 to 3, 1 to 7, 1 to 13, and the diluent, ranged respectively from 5.6 to 5.7, 5.2 to 5.8, 5.5 to 5.8, 5.4 to 5.7, and 5.2 to 5.7 Gm. per rat daily. As table 3 shows, commercially irradiated oats produced bone about 30 per cent heavier than the untreated, containing at the same time twice as much ash, thereby bringing up the percentage of ash approximately 50 per cent. Results such as these have been obtained repeatedly. In all cases the resultant improvement in calcification equaled that obtainable on these rations by direct irradiation of the animal or the addition of vitamin D in the form of cod liver oil.

TABLE 5.—*Antirachitic Potency of Commercially Irradiated Muffets and Farina Expressed in Terms of Percentage of Ash in Rat Femurs*

	Irradiated	Diluted 1:3	Diluted 1:7	Untreated*
Muffets				
December, 1928.....	55.5	51.4	41.4	38.2
January, 1929.....	54.3	51.3	48.3	35.3
February, 1929.....	55.9	52.4	50.9	36.5
March, 1929.....	54.0	49.5	47.1	39.5
April, 1929.....	54.1	49.7	46.4	37.1
Farina				
December, 1928.....	51.0	45.1	40.8	32.9
January, 1929.....	50.0	40.9	36.8	29.5
February, 1929.....	48.0	37.8	....	30.1
March, 1929.....	45.6	35.9	35.7	33.6
April, 1929.....	51 2	40.7	37.3	28.3
Cooked farina.....	45.4	....	....	33.0

* These values were taken at random.

We have obtained similar results with dogs. Four dogs from two litters were started at approximately 6 weeks of age on rations composed of 65.9 to 66.9 per cent rolled oats, 20 per cent skimmed milk powder, 5 per cent alcohol extracted and heated casein, 5 per cent ground alfalfa, 1 per cent sodium chloride and from 2.1 to 3.1 per cent tricalcium phosphate. Litter mates were kept on the same level of tricalcium phosphate. One dog from each litter was kept on commercially irradiated oats and one on the untreated. The ration ingredients were mixed, finely ground and soaked with distilled water for six hours. The mixture was then cooked in an autoclave at 15 pounds pressure for fifteen minutes. Initially from 100 to 150 Gm. was given daily in two portions morning and night, but, as the appetite of the animals increased, the amount offered was gradually increased, until at the close of the experiment they were getting 350 Gm. daily. The amount offered was kept the same for litter mates. Distilled water was fed ad libitum. The dogs were kept in small pens in the laboratory on concrete floors bedded with pine shavings. Blood analyses were made by the Clark-Collip [29] method for calcium, and the Bell-Doisy-Briggs [30] method for inorganic phosphates. Ribs were ashed after exhaustive extraction with

29. Clark, E. P., and Collip, J. B.: J. Biol. Chem. **63**: 461 (March) 1925.
30. Briggs, A. P.: J. Biol. Chem. **53**: 13 (July) 1922.

alcohol and ether. The results of these experiments are shown in table 4 and figure 1. They are self explanatory. Rickets was entirely prevented by the feeding of the irradiated cereal.

During the last year there have become available a number of breakfast foods treated commercially with ultraviolet rays. These have been checked by us from month to month for their rickets-preventing properties. Representative data of these tests are shown in table 5. For the determinations we used rats as already described, litter mates being put on different levels of irradiated cereal, from four to six rats being put in each group. The rations were compounded with the cereal making up 76 per cent of the ration, yeast 6 per cent, wheat gluten 14 per cent, calcium carbonate 3 per cent and sodium chloride 1 per cent. The treated cereals were fed undiluted and diluted with 3 and with 7 parts of untreated cereal to determine the excess of vitamin D present beyond that necessary to produce maximum calcification. We also obtained additional data on the effect of heating such as that to which a cereal is exposed under practical cooking conditions. These data were obtained with farina cooked according to the directions of the manufacturer; 193 Gm., representing half of the contents of an ordinary package, was stirred into 1 quart of boiling water and kept over a boiling water bath for ten minutes, being stirred once. For our rat tests it was then cooled to from 20 to 30 C. and mixed with supplements of yeast, wheat gluten and salts. These portions were prepared for two days and kept in the refrigerator until required for feeding. Consumption records show that the rats consumed approximately equal amounts of the irradiated and the untreated; namely, 5.6 and 5.7 Gm. (dry weight), respectively. The average increase in weight per rat in the five week period was 38 and 36 Gm., respectively. The average ash values for the six rats in each group are shown in table 5. They demonstrate that the cooking process did not bring about any deterioration in antirachitic potency.

It is to be noted that, in all the tests of commercially irradiated cereal, less than maximum calcification was obtained on rations in which only one fourth of the cereal had been irradiated. This, it is to be stated, is the degree of activation to which commercial operations are limited. Not only is the possibility of change of taste prevented in this manner, but hypervitaminosis is likewise avoided. We have fed a complete ration consisting of commercially irradiated rolled oats 63.5 per cent, yeast 5 per cent, whole milk powder 30 per cent, and salts 1 per cent to young rats and, to date, have produced four generations of vigorous and apparently normal animals. Of these, figure 4 shows growth and reproduction of four females of the first generation. To date, at the age of 15 months, one of these females has produced six litters, totaling forty-four young.

Many investigators [31] have established the fact that abnormal symptoms and excessive calcification result from the hypervitaminosis following excessive vitamin D ingestion. That this condition results is not to be denied. It represents a real hazard with unguarded use of concentrated medicinal preparations such as those of viosterol (irradiated ergosterol). However, evidence is rapidly accumulating that even with such preparations the therapeutic dose must be multiplied in the thousands before this condition is brought about. In the absence of data covering widely varying conditions of dietary habit and circumstances, to be absolutely safe in the use of irradiated foods it appears necessary that the antirachitic potency of treated foods should be so limited that all possibility of hypervitaminosis, even when they are consumed to the exclusion of other foods, is absolutely prevented. This desideratum is not so difficult of accomplishment as it appears on first inspection. In the first place, the activatable constituents in foods in common use are limited in amount, so that a high degree of potency cannot be imparted. In the second place, when foods are excessively irradiated they acquire an abnormal flavor which makes them unsuitable for human use; and, in the third place, the effect of ultraviolet radiation is only a surface effect.

However, it seems desirable that foods should be activated to a definite standard. For cereals we have adopted as a standard that degree of activity which will allow normal bone production when fed as the sole source of cereal in our ration 2965, but not when diluted with 3 parts of untreated cereal. This keeps the cereal definitely in the food class and does not make it a medicine. In other words, it makes it definitely of hygienic value but not generally efficient as a curative agent. It, of course, is highly desirable to obtain data on the human being, which will accumulate eventually, though ordinary data in clinical practice cannot be interpreted with the accuracy of animal experiments. Their value lies in establishing beyond all criticism margins of safety for the species. We feel certain that the standard set by us is one that can be used safely with all foods. It must, however, be admitted that there are many circumstances in connection with vitamin D requirements which need to be investigated. For instance, one can well raise the questions: Is there a possibility of hypervitaminosis resulting in the adult through the consumption of such an amount of vitamin D as is necessary for normal bone building in the child? Is the health of the nonlactating person endangered by taking as much vitamin D as is necessary for the nursing mother? May there not be some danger in insuring, by additional vitamin D intake, uninterrupted normal bone building during the entire period of an individual's growth? And it must always be recognized that the optimal vitamin D intake is conditioned by the calcium content of the diet. Excessive cal-

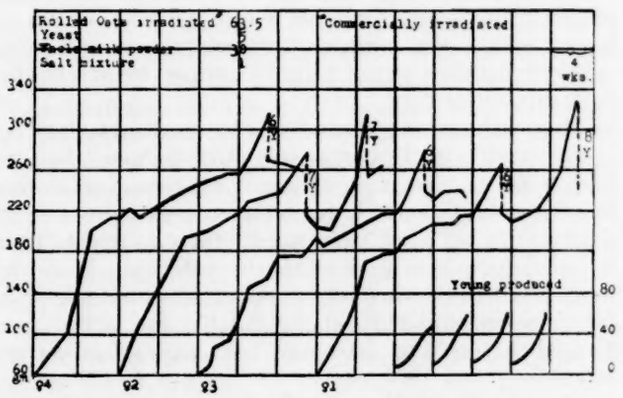

Fig. 4.—Effect on rats fed irradiated Rolled Oats.

31. Pfannenstiel, W.: München. med. Wchnschr. **75**: 1113 (June 29) 1928. Kreitmair, H., and Moll, T.: Ibid. **75**: 637 (April 13), 1113 (June 29) 1928. Kreitmair, H., and Hintzelmann: Arch. f. exper. Path. u. Pharmakol. **137**: 203, 1928. Harris, L. J., and Moore, T.: Biochem. J. **22**: 1461, 1928. Harris, L. J., and Stewart, C. P.: Ibid. **23**: 206, 1929. Smith, M. I., and Elvove, E.: Pub. Health Rep. **44**: 1245 (May 24) 1929. Hess, A. F.; Lewis, J. M., and Rivkin, Helen: The Status of the Therapeutics of Irradiated Ergosterol, J. A. M. A. **93**: 661 (Aug. 31) 1929.

cium intake makes vitamin D more harmful. It is, however, certain that during man's phylogeny under different dietary and climatic environments, with particular reference to exposure of body and food to sunlight, he has exceeded his required vitamin D intake not only by large amounts but over extended periods of time. On this basis, if on no other, it is to be expected that a considerable degree of tolerance should have been developed. As already stated, this point of view is supported by our animal experimentation.

As opposed to those who may be skeptical about the value of the general use of irradiated foods on the basis of danger of hypervitaminosis, there may also be those who will believe that little, if anything, is to be gained by the use of these foods because of their low degree of potency. It is difficult to answer this criticism except by calling to their attention the fact that it is preferable to be absolutely safe by avoiding an excessive intake and that any treatment which has as its result the unquestioned improvement of a food, even though this improvement is of a small degree, is one that is not only justifiable but should be instituted in the interest of public health whenever circumstances permit.

SUMMARY

Various cereal products, viz., whole wheat meal, patent white flour, shredded wheat biscuits, cream of wheat, whole corn meal, corn flakes, hominy and rolled oats were made antirachitically active by irradiation with ultraviolet rays.

This activity was found stable to autoclaving for thirty minutes at 15 pounds pressure followed by drying at 60 C. for a few days. Storage for sixteen months at 60 C. or at lower temperatures did not cause destruction, but after from twenty-three to twenty-eight months there was a decrease in potency. However, long before this time even untreated cereals kept at 60 C. were rendered too unpalatable for human use. Household cooking does not have any effect on the activity.

Vitamin A and the vitamin B complex are labile to ultraviolet radiations, but evidence of their destruction in cereals can probably not be obtained with such an exposure as is necessary to secure maximum antirachitic activation.

The commercial irradiation of cereals was standardized so that the activity induced did not exceed by a multiple of 3 that necessary to form bone of maximum ash content, thus preventing change in palatability, destruction of vitamins and all possibility of hypervitaminosis.

By the feeding of commercially irradiated rolled oats, rickets was prevented in dogs and rats and no interference in growth or in reproduction was shown in the latter over a duration of fifteen months in four generations.

The Roentgen Ray and Urology.—It was John McIntyre, of Glasgow, who reported a case in the *Lancet* of July 11, 1896, of a patient who had been previously operated on for renal calculus; by a twelve-minute exposure, a shadow of a large calculus was shown. The patient was operated on and the calculus found and removed. Charles Lester, in the *Archives of Roentgen Ray* for May, 1899, in an article entitled "The Detection of Calculi by the Roentgen Ray," reports seventeen cases of renal calculi diagnosed by x-ray examination; eleven of them had been operated on and the diagnosis confirmed in all. There were negative diagnoses in five cases confirmed by exploratory operation.—Frere, J. M.: The Roentgen Ray in the Diagnosis of Renal Calculi, *J. Tennessee M. A.*, November, 1929.

MENTAL HYGIENE IN CHILDHOOD*

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Mental hygiene is a phase of prophylactic medicine. It is not primarily concerned with mental deficiency, insanity or the epilepsies so far as these pathologic conditions are concerned, even though mental hygienists must deal with children thus afflicted. Mental hygiene is more concerned with the prevention of mental deficiency, the epilepsies and the psychoses and, particularly, with those mental states which may rise from organic diseases, as syphilis and tuberculosis. The prophylactic phase is likewise evident in all efforts to lessen the occurrence of various neurotic states, sexual deviations that may be mentally perturbing, or other functional maladaptations. Therapeutics has its prophylactic aspect as a part of mental hygiene at all ages. The early cure of congenital syphilis, for example, is a step in promoting the hygiene of childhood, tending to lessen the probability of juvenile paresis or later cerebrospinal syphilis. The use of some glandular extracts for the treatment of hypofunction is preventive of psychic maladjustments, but so is the use of proper lenses for myopia and the administration of arsenic for chorea.

Childhood is the most important era for the practice of all forms of hygiene. A child is not an adult nor, indeed, is he a static physiologic system. All of childhood tends toward physiologic and psychologic integrations, together with the establishment of social equilibrium at some problematic period of emancipation and maturity. It is because childhood is in a state of flux and the temporal placement of its goal of maturity is somewhat uncertain that there is need for a clear understanding of the purpose of mental hygiene during childhood.

Mental hygiene is the science and art of promoting the successful adaptation of personal dynamic drives and goals to the more static social pressures and patterns.

Behavior is the dynamic expression of a unitary biologic social organism.

Personality equals the sum total of individual social reactivity and reaction to group experience.

Character is the greatest common divisor of the multiple social phases of personality.

These definitions indicate part of the difficulty in establishing a foundation view of mental hygiene in childhood. The purpose of mental hygiene, whether in its prophylactic or in its therapeutic aspects, is to bring about a normal adaptation of an individual to his environment, which environment must include himself. Children's behavior in large part represents a transitional phase of existence because their personalities are nonadult and their integrations are incomplete. There is, therefore, some necessity for appreciating the characteristics of childhood, and the extent to which successful adaptation may be secured during the course of evolution through childhood into maturity.

A child must be considered as a functioning unit. In this unitary organism there are biologic and social phases almost as inseparable as the obverse and reverse side of a coin, although both may have different patterns. The biologic phase of childhood is constituted in the innate and acquired physical, intellectual and emotional mechanics of child organization and development.

* Read before the Section on Nervous and Mental Diseases at the Eightieth Annual Session of the American Medical Association, Portland, Ore., July 11, 1929.

Mental hygiene enters biologically into the physical habit patterns, the organic neuron patterns and the endocrinologic factors so far as they have been determined. The intellectual phases of inherent capacity, creating the potentials of a balance of power, relatively positive or negative so far as the norm of the mass is concerned, involve a large measure of mental hygiene, not merely from the standpoint of daily usefulness in living but as preparation for future mental adjustments. The biologic character of emotion, whether interpreted in terms of physics and chemistry, visceral tonus or preconditioning tension, involves problems of mental hygiene of profound importance. To think in terms of the psychogenic bases for human action as propounded by Freud, Adler and Jung makes evident the degree to which mental hygiene is allied with the problems of emotional motivation, the purposeful goal of action and the spheres of conscious and subconscious emotional stimulation and response.

The mere existence of these biologic phases of childhood is inadequate to explain juvenile activity, because, by the very nature of their creation and the biology of conception, the biologic organism called a baby is at the same time a social organism, and its psychology is an outgrowth of the development of the balance in unity between these two phases of its existence. The biologic child is born a member of a group and throughout life is subject to countless group relationships to which he reacts consciously and unconsciously. As a member of a family, a pupil at school, one who lives in a definite neighborhood, city and state, who attends a regular church or Sunday school, and selects his own companions, he is subject to a series of diversified impressions and stimulations which help to determine the growth of his personality. There are definite responses of his physical, intellectual and emotional potentials to the group activities, pressures and restraints. So far as he is cognizant of response to group demands and according to the extent to which he affiliates himself definitely with the spirit of a group standard, he environs himself. The child now responds in sentiments, judgment and actions in terms of his total environment, which includes not merely his biologic organic responses but also his conscious and subconscious reactions to concrete phases of life. His social nature derives from the totality of the environmental forces introjecting themselves on him, on which he in turn is projecting all his forces, physical and ideational.

It is obvious that mental hygiene inheres in the social pressures and inhibitions of varying relationships. The social mores, traditions and tabus exert forces through the family, the school and the church, causing frictions and conflicts in internal organization. The behavior responses induced by these social relationships and the responses of the biologic mechanisms are largely responsible for the necessity of mental hygiene, which becomes a helpful factor in facilitating the adaptation of the individual in his strivings for biologic satisfaction in a social environment.

Social life is biologically conditioned, but none the less so is instinctive life socially conditioned. No one denies that a child's social relationships are determined in part by the state of his heart, lungs and nervous system. But sometimes people fail to recognize that even such basic instincts as grow out of hunger and love take their expression along the lines that are determined by social regulation. The success of the instinctive level of activity for an individual depends on the family and the community in which he has been born. Mental hygiene must take cognizance of circular response. The environment acts on inherited patterns, and their responses in turn serve as stimuli acting on the environment. The repercussions of these responses evidence fusion of interacting biologic and social elements entering into psychic activity. From the degree of harmony and conflict of these faceted expressions of a developing personality arise the problems of adaptation.

The ordinary point of view of physical hygiene may be applied to the mental realm. The hygienist thinks in terms of food, clothing, air, ventilation, cleanliness and sewage disposal, protection from germs, parasites and contagions, posture, exercise and rest, industrial activity and schools. The mental hygiene of man may be expressed in similar terms. Posture as it reflects attitude or position, food as mental pabulum in the form of ideas, aerating and ventilating ideas and fancies, cleansing and purging the mind through mental catharsis, securing a release of subconscious sewage, protection against the germs of hysterical unhappiness, the contagions of anxieties, the paralyzing action of parasitic fears and the compelling power of obsessive phantasies all call for the attention of mental hygienists and psychiatrists. The effects of industrial relations, long hours, process-serving jobs and even low wages, the adjustments of schools in terms of curriculum, methodology, the formalisms, inelasticities and rigidities profoundly enter into the realm of mental hygiene. These hygienic phases are almost as important as the conflicts and struggles born of subconscious fears and inferiorities, or an aborted or perverted love life. Any and all may be responsible for a warfare on the psychic battlefield with results as devastating as the war neuroses.

Mental hygiene deals with problems growing out of efforts at adaptation. Part of its concern lies in training children—training in terms of definite purposes and goals. This involves all the elements entering into ordinary neuromuscular coordinations, the formulation of proper habits to meet the demands of life, not merely during childhood but during the years of maturity. It is essential to aid, direct and guide children in the acquisition of habits that will control their inherited behavior trends so that they will function adequately in the light of social demands and principles. Even such an act as defecation has inherent in it a social significance. Fecal continence is not merely biologic sphincteric control but a form of adaptation to a social demand and standard of behavior.

Throughout childhood, mental hygiene seeks to bring about a compatability between the ego and alter ego components of personal activity. Harmonizing biologic urges and social interests calls for constructive efforts, so that there is a reasonable preservation of the ego in the individuality while the production of adequate personality trends are being fostered to meet the necessities of biologic and social adjustments at maturity.

Patently, according to this theory, the end-result is to secure an integration of the biologic and social pressures and urges so that the harmonic unity of being lessens the likelihood of psychic maladjustments. The problems of repressions, conversion hysterias, anxiety neuroses or dissociations in personality are of no greater significance in this scheme than are outbursts of temper, irritability, seclusiveness, depressions and juvenile delinquencies from truancy to sexual assaults. This point of view is constructive, directed toward coordinating, conserving and protecting personal development, personal

development being considered with the idea of living among people. The behavior factor thus far becomes identical with the sum total of the reactions of the individual in and through living. The application of mental hygiene, as I have already suggested, involves promoting the successful adaptation of the personal dynamic drives and goals with the more static social pressures and patterns.

The psychiatrist, perhaps, is accustomed to think only in terms of definite intrapsychic mechanisms. The attack on juvenile problems of mental hygiene, however, would be unsuccessful were it based merely on a psychogenic etiology and directed solely according to one theory of mental activity. Mental hygiene has no single mode of approach guaranteeing success, nor is there any panacea theory that can be supplied universally to the training of children. There is necessity for an appreciation of the principles involved in reconditioning as developed by Watson, a recognition of social psychology as propounded by McDougall, as well as an understanding of the Oedipus complex of Freud, the inferiority complex of Adler, and the introvert and extravert types of Jung. Part of my criticism of much of the present-day approach to problems of mental hygiene is based on its narrow point of view, which assumes the adaptability of the psychology of adults to the problems of childhood as though the child were only an undeveloped adult. The psychiatrist must have a broader outlook on mental hygiene and a keener recognition of essential deviations in the psychology of childhood from that of adult life if his service in mental hygiene is to be of substantial benefit.

I am suggesting some fundamental elements which must enter into the mental hygiene of childhood if it is to be developed intelligently, rationally and continously and is to yield the maximal inherent personal social benefits. I believe there are requisite many distinct and significant phases of activity. First, there is the necessity of promoting a higher degree of social conscience with reference to children, based on an intelligent appreciation of their nature, their mode of development, their rights and their difficulties in adaptation; a social conscience that will take more cognizance of child labor, orphan asylums, juvenile delinquency, reform schools and various other institutions that affect the attitudes, the interests and the psychic welfare of the young.

There is necessity, and, I am glad to say, there is growing evidence of the recognition of the necessity for more scientific school adaptation. There is need for fostering the principle of individual adjustment in school life. This involves a more rational development of curriculums, the establishment of distinctions between school achievement and school discipline, together with the development of mental hygiene clinics in schools. Mental hygiene needs the focus of a clinic on the specific problems which arise in every school system as a result of the failure of specific children to make happy adaptations to the formal demands of mass education.

A more intelligent effort to advance the levels of familial education is essential. Intelligent parenthood must be encouraged; a clearer understanding of the social import of parenthood as a social trusteeship must be inculcated. To broadcast the hazards of parental oversolicitude, parental pressures and domination and the harmfulness of potential parental fixations is part of the service of rational constructive mental hygiene. The family constitutes the first social group of the child, and inherent in this group relationship and reactions are many of the most significant influences which profoundly affect the mental equilibrium of children. The inhibitions demanded by the right to individual happiness and comfort in the home, the repressions which result from home experiences with parents, siblings, relatives and helpers, and the subjection to various needless dominations in parent-child relationships are matters of social import as well as of parental activity.

There is need, therefore, for a large measure of familial education through all the nonclinical instrumentalities that are now available plus many more that will be added through improved methods of adult education which will popularize the scientific facts of physiology and psychology and secure the promulgation and elucidation of principles of mental hygiene in childhood. Through women's clubs and parent-teacher associations, by means of lectures, the printing press, the movies, the talkies and the radio, the mental hygiene influences will penetrate the home.

The attack on the external social world through such institutions as government, laws, regulations, education, religion and ethics constitutes one important side of the picture. Mental hygiene cannot be divorced from sociology and economics. Concurrently there is the effort at personal education and reeducation in terms of physical organization, visceral tonus, neuromuscular coordinations and the functioning of all the systems of the physical body, with their definite influences and effects on psychic activity, including intellectual effectiveness and emotional reactivity. Every change in the environment affects the totality of the individual. The boy is not psychically identical when swimming in a pool, running an errand, working in a factory or doing difficult school tasks. The psychic status of the girl alters when she shifts from dish washing to dancing, and also when she takes off the housework dress and replaces it with a sleeveless party frock. The amputation of a finger removes more than two or three phalanges, while the loss of a thumb of the pitching hand may alter the entire outlook on life. Jealousy of another child may be expressed as a paralysis; fear of a father as deafness; school failure as vomiting, and recurrent imagery of attempted assault as epileptiform seizures. The interaction between the physical and the psychic, the interplay of the biologic and the social, indicate the necessity for mental hygiene to permeate the realms of home life and all the activities of communal life.

This may sound like an indefinite, vague plan beyond the possibility of practical utilization. I am not blind to its content or to the unlikelihood of its general attainment. It represents, however, the field of mental hygiene and suggests numerous lines along which constructive efforts may be directed against elements as diverse as alcoholism and the zoophilic diathesis, myopia and masturbation, pavor nocturnus and stealing. There is need for a large variety of continuous and discontinuous instrumentalities to be employed in promoting mental hygiene. One of the most significant and potentially the most useful agency is to be found in the persons of the physicians of this country.

Different degrees of service may be rendered by general practitioners of medicine, by pediatricians and by psychiatrists. I need not dwell on the function of the teachers and the psychologists before this medical group.

Mental hygiene is not a sacrosanct field belonging to a single group of the medical profession any more than physical hygiene is the sole right of a physical trainer. Medicine is shot through with potentials for mental hygiene. Every contact with a child, every contact with a home, abounds in opportunities for promoting psychic welfare. There are specific opportunities, however, for pediatricians and psychiatrists when types of behavior occur which indicate profound inadequacies of personal adaptation. To meet the problems of untold numbers of maladjusted children, whether their difficulties arise in the home, in the school, in gang experiences or from inherent difficulties, such as hypothyroidism, diabetes or syphilis, there is need for clinics or stations for child guidance and child adjustment.

Whether in private practice, child guidance clinics or school clincs there is the ever present necessity for a careful analysis of the biologic and social factors entering into every juvenile situation, as the mode of treatment for the purpose of attaining normal behavior depends on the leverage factors entering into causality. The child must be studied in the setting which is molding his behavior trends and partially determining his future responses.

A warning is necessary at this time, because I fear that the demands for child guidance clinics and clinics for mental hygiene for children as well as for adults are multiplying so rapidly that the medical profession is unable to supply adequately trained physicians, psychiatrists and pediatricians to meet their needs. Unwise guidance means unsound teaching, which, in turn, is in itself a form of poor mental hygiene. What is necessary at the present time is a thoroughly hygienic mental hygiene program, and such a program would demand that no mental clinic be opened unless under the auspices of persons properly trained in theory and practice so as to be dependably safe in dealing with the most important problem of child life and social adjustment.

There is need for the promotion of personal health and rational mental guidance during childhood. Mental hygiene must be regarded as a form of social prophylaxis to the extent that it can prevent the development of the mentally defective, the epileptic, the psychoneurotic, the psychotic, and the maladjusted victims of organic diseases. It is equally preventive in its social service as it diminishes the number of maladapted children and adolescents whether their maladjustment finds expression in egocentricity or eccentricity, in benign stupor or manic activity, in enuresis or excessive seclusiveness, in juvenile delinquency or adolescent crime.

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ABSTRACT OF DISCUSSION

DR. THEODORE DILLER, Pittsburgh: This paper fills me with despair. I cannot hope ever to see parents wise enough to carry out such complicated guidance as is outlined here, nor do I have any hope that physicians or psychiatrists will ever be learned enough and wise enough to direct parents in the way that is called for by the paper.

DR. JOSHUA ROSETT, New York: The problem Dr. Wile has sketched is so extensive that one may well doubt the moral fitness of any human being to solve that problem.

DR. JOSEPHINE A. JACKSON, Pasadena, Calif.: I am a little more optimistic and I think that we are all indebted beyond words to Dr. Wile for the clear presentation of the problem which he has given, but we must remember that nature endows us intuitively with really a great deal of readiness and preparation for the care of children. When we know what we need to do, parents, teachers, educators and others will do it.

DR. CHRISTIAN J. ROHWER, Seattle: From the standpoint of the private practitioner, in such mental hygiene problems as are brought to us a definite form of approach has been worked out, largely through the efforts of the National Committee for Mental Hygiene and certain pioneer workers in this field. The approach is made through a study of four aspects: first, the physical examination of the child, to note physical endowment; second, the mental equipment through the work of psychologists; third, the family or social situation from which the child comes; fourth, the child himself, or what is known as the child's own story. The latter is the interview which the psychiatrist has with the child wherein he tries to determine what it is all about —the child's attitude to the particular problem. It may be concerned with his emotions or instincts, or with stealing, truancy from home or school, or similar problems. When we investigate these four phases or lines of investigation, we come first to the physical. If it is found that the child has a cardiac disturbance or some other medical condition, that child is referred to the family physician or to a specialist, as the case may be. The psychologist helps us very much in determining what the mental equipment of the child is. The questions of good or defective mentality and what are the child's special abilities or disabilities arise. Psychologists have worked out numerous tests, many of which are being standardized, so that the results shed a good deal of light on what children are best fitted to do. Then comes the family situation, and this is often most illuminating. One really does not often have to go to great depths in probing the child's mental life. Frequently on the very surface of the family life one finds material which explains behavior problems and brings children to the child guidance clinic. In this field of mental hygiene it is most important that we reach out into the fields of sociology, psychology, education and all the experiences and influences which come into children's lives. I should like to emphasize one or two points which Dr. Wile mentioned; namely, that mental hygiene is not a panacea in itself. It is a scientific attempt to get at what is the trouble with the child, whether stealing, masturbation, truancy from school or any other form of juvenile delinquency. It has been my experience in dealing with problem children that it is not so much child guidance which is needed in these problems as it is parent guidance or education. Parents and teachers tend to overemphasize or to underestimate certain phases of a child's life. Certain tendencies which we consider as perfectly normal and natural are often misunderstood, and both parent and teacher tend to project their own feelings into the situation.

DR. IRA S. WILE, New York: For a group of people who are accustomed to treating dementia praecox and paresis to talk about despair in connection with the problem of guiding children is the most remarkable aberration mentally that I have heard of in a long time. If there is anything that causes despair, it is trying to correct the eccentricities and diversities of human nature after it has been warped by too long living, by too great a conflict in life and contact with disease. I do not know whether it is realized that there are at the present time in the United States 110 clinics devoted to child guidance, each of them probably handling an average of 250 problems a year. That does not mean much. It is a beginning. But there is no despair; there is no thought of despair. The constant increase of interest in child guidance, in mental hygiene, in the development of a more intelligent outlook on school situations, on institutional life, and on all the affairs that enter into the welfare of childhood, indicates that there is a striking note of optimism, which I gladly heard from Dr. Jackson. If it has not reached the psychiatrist, then it is time this meeting on mental hygiene was held, because there is no field of greater psychiatric effort than that of training the young so that they will escape the warping of character, the warping of habits, the warping of their thoughts and the development of a lack of reality in life which make more work for psychiatrists during the ages of maturity and senility. It seems to me that we have a definite work to do, and either the scientists and physicians are going to enter the movement with optimism and enthusiasm or they are going to be dragged into it by the laity. Laymen are alive to the situation and they are without despair. Dr. Rosett talks about the moral fitness to undertake this task. If it is not within the ability of the medical profession to

manifest its moral fitness in the practice of medicine calling for moral fitness in taking care of a whole human being, then it is time we had a greater increase in the cultists who are not afraid to have confidence in themselves. Let us be perfectly frank and honest. My mental hygiene is at a rather heated point, but it is expansion that I am desirous of securing through the heat, and if we can get a little development of optimism in place of despair at this moment, my few minutes will not have been wasted. When it comes to a question of despair and moral fitness as the only argument against a plan that is proposed, then I say that despair has never been characteristic of the medical profession. Moral fitness has been the one stone and rock on which all medicine has been founded.

GONORRHEA OF THE ANUS AND RECTUM

REPORT OF SEVENTY-FIVE CASES *

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Gonorrhea of the anus and rectum is not at all a rare disease, yet I think it is a disease that has been too much overlooked in the past. I find that many urologists do not appreciate the fact that it is of fairly frequent occurrence and I think that the proctologists themselves do not discover this condition as often as they should. There have been a number of articles on this subject, but the textbooks for the most part are barren of reference to it. Tuttle [1] and Lynch,[2] in their respective books, deal more with this subject than any one else.

Almkvist [3] in 1925, reviewed the literature on gonorrhea of the anus and rectum and stated that, as early as 1789, Hecker in his book on "Maladies vénériennes" noted that there might be a gonorrheal infection of the rectum with a discharge of pus, and attributed this infection to unnatural sex practices. No other mention is then made of this infection until 1860, when Foerster,[4] in a textbook on pathologic anatomy, stated that the rectum may be infected by a spread from the genitals. In 1868, Rollet [5] reported a case of rectal gonorrhea due to spread of the infection from the urethra.

In 1874, Tuttle [1] stated that Bonnière made a number of experiments, injecting known gonorrhea pus into the anus and thereby infecting the patient. However, when he injected the pus into the rectum, he did not think it had any effect. In 1886, Jullien [6] described a number of pathologic changes resulting from gonorrhea, including rhagades, ulceration and condylomas.

Cases of gonorrhea were reported now fairly frequently, and at the Second Dermatological Conference, in 1892, rectal gonorrhea and the ulceration and stricture resulting from it were mentioned by Neisser,[7] Lang and Staub. The latter described a case in which fistula developed. Neisser,[8] in 1894, reported five cases of rectal gonorrhea.

In 1896, Baer [9] reported sixty-seven cases of rectal gonorrhea in women. In nine of these cases there was an association periproctitis and, in some, abscess formation. Huber reported three cases of gonorrheal periproctitis with abscess formation in two.

In 1905, Flugel [10] reported rectal gonorrhea in cases of gonorrheal vulvovaginitis.

In 1921, Stühmer [11] reported twenty-six cases of rectal gonorrhea in men. The infection in these cases was due to prostatic massage done in field hospitals during the war. In 1922, Langer reported a case that was followed by stricture.

Levy and Weissmann [12] discussed this subject in detail and, in addition to the usual pathologic condition found, they mention the development of a proliferative proctitis with the formation of tumors and rectal stenosis.

Jersild [13] recommended a heroic way of making a diagnosis; i. e., inserting two fingers into the vagina and forcing the rectal mucosa out of the anus to examine for ulceration.

In 1917, Cress [14] reported a case in which he thought the sigmoid and part of the descending colon were infected.

Barthelemy [15] believed that gonorrhea of the anus and rectum is due to auto-infection and that this occurs in as high as from 20 to 35 per cent of women with urogenital infection.

Moutier [16] reported a case of gonorrheal recto-sigmoiditis, apparently cured by injecting antigonococcus serum into the rectum.

Symonds [17] reported two cases of gonorrheal stricture with polypoid growths about the anus. Cohn [18] reported a case resulting from the perforation of a prostatic abscess. In 1920, Almkvist reported several cases of gonorrheal abscess of the rectum. Byfield and Floyd [19] reported six cases of gonorrheal proctitis in male infants, the rectal thermometer being the carrier of the infection.

Bloomberg and Barenberg [20] reported forty-one cases from the Home of Hebrew Infants. Two patients who were clinically cured died of pneumonia, and autopsy showed ulceration extending from 4 to 6 inches up the rectum.

Hartmann [21] noted that 50 per cent of rectal strictures occurred in women. Gonorrhea was the cause

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* Read before the Section on Gastro-Enterology and Proctology at the Eightieth Annual Session of the American Medical Association, Portland, Ore., July 12, 1929.

1. Tuttle, J. P.: Diseases of Anus, Rectum and Pelvic Colon, pp. 213, 257.
2. Lynch, J. M.: Diseases of Rectum and Colon, pp. 175, 188.
3. Almkvist, J.: Ueber Abscessus ad Anum gonorrhoicus und Drüsenkomplikationen der Rektalgonorrhoe, Acta derm.-venereol. **6:** 1 (Jan.) 1925.
4. Foerster, A.: Lehrbuch der pathologische Anatomie, Jena, 1860.
5. Rollet, J.: Blenorrhagie, Dict. encycl. d. sec. méd. **9:** 638, 1868.
6. Jullien, L.: Traité pratique des maladies vénériennes, Paris, J. Baillière, 1886.
7. Neisser, A. L. S.: Principien der Gonorrhoe, Tr. Internat. Dermat. Cong., 1892; **2:** 303, 323, 1893. Lang and Staub refer to rectal gonorrhea in the discussion of this paper.
8. Neuberger, J.: Ueber Analgonorrhoe, Arch. f. Dermat. u. Syph. **29:** 355, 1894. Report comes from Neisser's clinic.
9. Baer, T.: Weitere Beiträge zur Lehre von der weiblichen Rektalgonorrhoe, Deutsche med. Wchnschr. **23:** 811; 381, 1897.
10. Flugel, K.: Ueber Rektalgonorrhoe bei Vulvovaginitis Infantum, Klin. Wchnschr. **42:** 325, 1905.
11. Stühmer, A.: Der klinische Verlauf der Rectalgonorrhoe, Dermat. Ztschr. **32:** 12, 1921.
12. Lévy and Weissmann: La blenorragie ano-rectale, J. d'urol. **15:** 13 (Jan.) 1923.
13. Jersild, O.: Eversion of Rectal Mucosa in Women, Especially with Regard to Diagnosis of Gonorrheal Proctitis, Hospitalstid. **69:** 234 (March 11) 1926; abstr. J. A. M. A. **86:** 1956 (June 19) 1926.
14. Cress, W. W.: Gonorrheal Proctitis, U. S. Nav. M. Bull. **11:** 228 (April) 1917.
15. Barthelemy, R.: La blenorragie ano-rectale, Gaz. d. hôp. **93:** 645, 1920.
16. Moutier, F.: Recto-sigmoidite ulcéreuse à gonocoques et sérothérapie spécifique, Arch. d. mal. de l'app. digestif **13:** 901, 1923.
17. Symonds, C.: Gonorrheal Stricture of the Rectum, Proc. Roy. Soc. Med. (Sect. Surg.) **16:** 12 (Jan.) 1923.
18. Cohn, A.: Ein Fall von Rektalgonorrhoe beim Manne infolge Perforation eines gonorrhoischen Prostataabszesses, Med. Klin. **20:** 315 (March 9) 1924.
19. Byfield, A. H., and Floyd, M. L.: The Relation of Gonorrheal Proctitis in Male Infants to Hospital Epidemics of Vulvovaginitis, Arch. Pediat. **41:** 673 (Oct.) 1924.
20. Bloomberg, M. W., and Barenberg, L. H.: Gonorrheal Proctitis as a Cause of Blood and Mucus in the Stool of Infants, Am. J. Dis. Child. **29:** 206 (Feb.) 1925.
21. Hartmann, H.: Inflammatory Strictures of the Rectum, Lancet **1:** 307 (Feb. 18) 1922.

in some cases, as indicated by suppuration. Buie [22] reported 258 cases of rectal stricture, and in none was gonorrhea mentioned as a cause.

ETIOLOGY

The method of entrance of the gonococci to the anus and rectum varies. Auto-inoculation in both sexes stands first and is of course higher in women since the vaginal discharge and the menstrual flow are the chief causative factors in them. Other causes are unnatural sex practices, infection caused by carelessness in attendants that look after children, as in the use of dirty thermometers and lack of cleanliness with their hands, carelessness of physicians in handling the parts of patients before giving rectal or genito-urinary treatments, and prostatic abscesses rupturing into the rectum. Rectal disorder is a predisposing factor, because of the fact that the patient frequently has his hands about the rectum.

It was interesting to me when I looked up the number of cases of gonorrheal urethritis treated in the Turner Urological Institute and compared this with the number that developed gonorrheal proctitis while under treatment. The number was surprisingly small. In 1924, 1925 and 1926, Turner Urological Institute treated 868 males and 173 females, a total of 1,041 cases of gonorrheal urethritis. My own cases for 1927 and 1928 numbered 152 males and 38 females, a total of 190 cases. This made a grand total of 1,231 patients, 1,020 men and 211 women.

I had the opportunity of treating all of these that might have developed a gonorrheal proctitis. Only five women and two men developed gonorrheal proctitis who came to us originally uninfected—a total of seven cases. Many of these patients came with infection in the genito-urinary organs and in the rectum. These, of course, are not mentioned in this list.

SYMPTOMS AND PATHOLOGY

The symptoms of this malady are usually the same as for an acute proctitis of any nature, that is, tenesmus, bearing down pain, burning, and passage of pus and blood. I have had two cases in which diarrhea was a prominent symptom. Some cases are symptomless, but one must always suspect gonorrhea if one finds pus in the anal canal or rectum and cannot find a sinus, abscess or an ulceration to account for it.

Inspection of the anus before any instrumentation will practically always reveal white or yellow pus. There is usually a superficial ulceration, and this is uncomfortable if the patient has hemorrhoids. Fissures are extremely frequent and painful in the early stages of the infection. In the severe cases there is an edema of the tissues. I do not know to what extent the rectum is involved in the early cases, for, owing to the fact that most of the patients were suffering, they were treated as gently as possible. Two patients having diarrhea had a red and ulcerated rectal mucosa which appeared edematous and oozed blood in places. In a number of acute cases, perhaps six, the smears were negative from the rectum. The picture was somewhat changed after the treatment had been under way for a while. In three patients that were getting on well and did not have any rectal involvement, the mucosa was pink and apparently normal, but in those with a pronounced rectal involvement there was edema, ulceration and the frequent discharge of a heavy, slimy pus. A severe rectal involvement occurs in a large percentage. This may be seen in the chronic cases, many of which develop into strictures in the colored race, but rarely in the white race. In all of the cases of stricture there is a marked periproctitis. The abscesses and fistulas that develop harbor the gonococci for an indefinite time.

22. Buie, L. A.: Benign Stricture of the Rectum, J. A. M. A. **81**: 1357 (Oct. 20) 1923.

COMPLICATIONS

Complications are fairly frequent and occur more often in cases in which there was preexisting rectal disorder. Stricture of the rectum is the most frequent complication in the colored race, because of their marked tendency toward scar formation. In the cases of stricture there is practically always a marked periprocitis. Physicians who have been accustomed only to white patients, with the advent of the colored race into the North and East, will change their minds as to the chief etiologic factor in causing stricture of the rectum. In the colored race, at least, they will find it to be gonorrhea. One explanation of this is that we do not see the colored until they are in a rather extreme condition. Abscesses and fistulas are frequent, perhaps more so in the white race. Condylomas occur in long standing cases, and polypoid-like growths occur around strictures and sometimes get fairly large.

TREATMENT

The prime requisite of treating gonorrhea of the rectum is gentleness and the use of soothing, nonirritating drugs. All instruments, syringes and catheters should be kept out of the rectum in the acute stage. The patient should inject mild silver protein or a similar preparation into the rectum with a bulb syringe having a blunt tip. This can be placed firmly against the anus, and pressure on the bulb will force the medicine through the anal canal. The insertion of a catheter or long tip syringe irritates the lining of the anus and the medicine does not come in contact with the mucosa. Later in the treatment, irrigations with potassium permanganate or weak silver may be used. If granulation tissue forms, strong silver nitrate can be applied. Of course, good behavior should be observed as it should in gonorrhea of the genito-urinary organs. The majority of patients will get well uneventfully in about two months.

Abscesses usually form in the early stage of the disease and should be opened and well drained. A fistula usually forms, and this can be attended to after the gonorrhea is cured or is under control. At times the gonorrhea cannot be cured until the fistula is excised. In all operations on the rectum when gonorrhea is present there is a marked tendency toward the formation of granulation tissue, and frequent applications of silver are necessary. Fissures in the early stages cause a great deal of discomfort, but the injection of a weak solution of mild silver protein will heal them. Severe hemorrhoids help prolong the disease, and if the case has run on for a long time the piles should be removed and treatment again instituted.

There is a certain type of case that I think is the forerunner of the stricture cases. These are the cases in which, for no apparent reason, there is a continued discharge of pus and long continued rectal inflammation. This causes many scars and resultant stricture formation. Treatment of all kinds seems to do little good. Stricture formation is the most serious complication and the hardest to treat. In the early stage, we use repeated rectal washes and dilations. If the condition is not too bad, a proctotomy serves for some, but this is unsatisfactory in most cases as there is so

much hard scar tissue that there is an incontinence. Carbon dioxide snow has been used by Clemons,[23] who thinks that there is a return of the elasticity to the tissue after its use. I have never had any experience with it. I do a colostomy when possible, and have the patient irrigate the rectum through and through. Many patients refuse a colostomy, but they are much more comfortable with a colostomy than without, and although I have closed some that got considerably better, the larger majority had rather retain the colostomy after they once have it. I resected the rectum in two cases, but this does not serve as well as a colostomy and it is an extremely difficult procedure, because of the extensive periproctitis.

ANALYSIS OF CASES

The seventy-five cases here presented cover a five year period from my private practice, a three year period from the clinics of the Hermann Hospital, and a five year period from the clinics of the Jefferson Davis Hospital. Almost half of the cases presented are from the year 1928. I feel that this is entirely because we did not look for this infection often enough. If I had taken smears as frequently in 1924, 1925, 1926 and 1927, I would have found many more cases of gonorrhea. I think that if we had taken smears in all fistula and abscess cases we would have found still more.

In the seventy-five cases reported, the mode of infection was unnatural sex practices in four men, ruptured prostatic abscess in one, infection in two children from carelessness of attendants, accidental infections of unknown origin in three male adults, and, in the remaining sixty-five, presumably auto-inoculation.

I feel that I did not miss many cases in my private practice, but am sure that in the clinics we missed quite a few. Of the 1,218 rectal cases seen, in seventy-five, or 6.2 per cent, there was infection with gonorrhea. In the 1,218 rectal cases seen there were 1,050 white patients and 168 colored. Of the 1,050 white patients, 636 of whom were males and 414 females, fifty-eight, or 5.6 per cent, had gonorrhea. Twenty-one, or 3.3 per cent, of the males were infected and thirty-seven,

TABLE 1.—*Seventy-Five Cases of Gonorrhea, with Their Complications, from One Thousand Two Hundred and Eighteen Rectal Cases*

	1,050 White		168 Colored	
	636 Men	414 Women	67 Men	101 Women
Abscess	5	5	0	0
Fistula in ano	0	3	0	1
Stricture	0	2	1	9
Condylomas	0	1	0	1
Rectovaginal fistula	0	0	0	1
Uncomplicated cases	16	26	1	3

or 8.9 per cent, of the females. Of the 168 colored, sixty-seven of whom were males and 101 females, seventeen, or 10.1 per cent, had gonorrhea. Two, or 2.9 per cent, of the males were infected and fifteen, or 14.9 per cent, of the females. An outstanding feature was the large percentage of infection in the female as compared to the male.

There were many cases of stricture of the rectum (forty) that gave a history of female disorder, evidently gonorrhea, and severe attacks of the piles, but because of negative smears they were not listed here although it was felt that the strictures were gonorrheal in origin.

23. Clemons, E. J.: Rectal Stricture, Tr. Am. Proct. Soc., 1926.

The twelve patients in this series included nine colored females, one colored male and two white women; the blood Wassermann reaction was positive in three cases. The colored people have a marked predilection for scar formation, both in the urethra and in the rectum. It does not seem to make any difference whether they are yellow, brown or black. The forty patients mentioned but not listed in this series were colored women.

TABLE 2.—*Percentage of Infections*

1,218 Rectal Cases, 75 (6.2%) Infected			
White		Colored	
1,050 cases, 58 (5.6%) infected		168 cases, 17 (10.1%) infected	
Male	Female	Male	Female
636 cases	414 cases	67 cases	101 cases
21 (3.3%) infected	37 (8.9%) infected	2 (2.9%) infected	15 (14.9%) infected

Cases of stricture are seen perhaps more often than any other condition in our rectal clinics. Many patients carry infection for years. Two of my patients were operated on for hemorrhoids, three and five years previously, and undoubtedly from their history they were suffering from gonorrhea. They cleared up from the infection after short courses of treatment. Two other patients had severe piles and had had gonorrhea for a long time; they were operated on and made a good recovery. Two patients having condylomas were cauterized and cured. The patient having a ruptured prostatic abscess made a quick recovery. In one case of rectovaginal fistula, the patient was in bad condition and nothing was done. There were ten patients with abscess and all were cured. Four patients with fistula in ano were cured. In all of my private cases I was able to get rid of the infection, but in the clinic cases it was a much more difficult problem and many of the patients were known to have had the infection for years.

SUMMARY

1. Gonorrhea of the anus and rectum is of frequent occurrence and is often overlooked by proctologists and urologists.

2. Gonorrheal proctitis is much more frequent in women than in men.

3. Auto-inoculation is the chief mode of infection.

4. Stricture of the rectum is the most serious complication encountered. It is rarely found in the white race but is frequent in the colored.

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ABSTRACT OF DISCUSSION

DR. DUDLEY A. SMITH, San Francisco: I am grateful to Dr. Hayes for calling my attention to the fact that we have been overlooking a large number of cases of gonorrhea of the rectum, if the percentage of cases he has found obtains at the University of California. I believe that by routine examination of the discharges in all cases of rectal disease we shall find a much larger percentage of gonorrheal infection of the rectum than we have found heretofore. There were two or three points with regard to treatment that I noted. First of all, when there is an anal ulcer or a lesion which causes pain, a rectal examination can be made very easily with little pain by a trick that I learned from Dr. Granville Hanes of Louisville. He drops a small portion of lubricating jelly on the anus, has the nurse apply a few drops of 50 per cent cocaine, and mixes it with an applicator until it makes a white mixture. He works that carefully into the anal canal and within three minutes is able to examine a very sensitive canal with slight pain. In the treatment of chronic inflammatory stricture of the rectum, we have been using the method of Clemons of Los

Angeles, carbon dioxide snow. We have treated several cases by this method with fairly good results, in a few with excellent results, but in some cases we have not had such good results. Therefore I was pleased to see reports in the *Presse médicale*, one by Kummer of Geneva and one by Bensaude of Paris. They have been treating chronic inflammatory stricture by diathermy and report excellent results. Since reading those articles I have treated four cases by diathermy and the results are very encouraging.

DR. HERBERT T. HAYES, Houston, Texas: I appreciate Dr. Smith's remarks about the use of carbon dioxide snow and the blend and am glad that some one else is getting some results. I have not tried it. I have some of his applicators but I have not used them. I am using carbon dioxide snow in strictures. Because this is said to bring back elasticity to the scar tissue, it should give some results. The reason we do not get any results from stricture of the rectum with most of our other treatments is that there is no elasticity and in the bad cases one of the outstanding symptoms is that there is no compression power to hold the fecal matter.

COCCIDIOIDAL GRANULOMA

ANALYSIS OF FIFTY CASES *

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LOS ANGELES

We have been able to secure records of fifty cases of coccidioidal granuloma out of a possible fifty-four which have occurred since 1916 at the Los Angeles County General Hospital. These have been carefully studied in an attempt to establish more fully some generally accepted ideas with regard to the disease, and, as far as possible, to secure new data. Clinical, pathologic, and roentgenographic phases are considered.

CLINICAL ANALYSIS

Age and Sex Incidence.—Six of the cases occurred within the first decade of life, four in the second, twenty-one in the third, twelve in the fourth, five in the fifth and two in the sixth. The ages from 20 to 40 therefore include the majority of cases—in this series, 66 per cent. The average age is 27.7 years. There are as many patients below the average age as above it. Of the fifty patients, forty-one are male and nine are female.

Occupation and Racial Extraction.—There are eight children, six housewives and three males without stated occupation. Of the remaining thirty-three, ten are ranchers, including two fruit pickers; thirteen are listed as laborers, without further specifications; three are cement workers; two are truck drivers; one is a steam shovel engineer (all these have a dusty occupation); two are food handlers, one in a restaurant and one on a dining car; one is an elevator operator, and one an operator of an electrical substation.

Twenty-eight, or 56 per cent, are Mexicans; ten are negroes; six are of white extraction; three are Filipinos, and one each is Russian, Greek and Serb.

Probable Source of Infection.—Twenty-one patients probably acquired the infection in southern California, south of the Tehachapee Mountains; seventeen in the San Joaquin Valley, north of there; one in New Mexico, and one in Old Mexico. In ten, the probable source is not sufficiently indicated in the records.

Preceding Respiratory Infection or Trauma.—Thirteen patients give a history of having had some infection of the respiratory tract, usually of several weeks' duration, beginning from two to sixteen weeks prior to the initial external lesion. Two other patients give pulmonary symptoms as their only complaint. These observations are based on statements in the history of having had "influenza," "pneumonia" or "pleurisy," or of having had a cough, or blood-tinged sputum. One patient gave a history of fever and sweats without pulmonary symptoms six weeks prior to the initial external lesion, and one patient had had a severe chronic bronchitis since early infancy; in this case the initial lesion developed following "scarlet fever."

Using the fifteen well defined cases with pulmonary symptoms in calculating a percentage, and deducting six cases from the total fifty, because of very inadequate history, we have 34 per cent of cases manifesting infection of the respiratory tract prior to the initial external lesion. As the vast majority of these histories were obtained from Mexicans, many of whom could speak little or no English, it is certain that this percentage is not entirely representative of the probable incidence. With better histories and specific questioning, we may expect that this percentage will be increased.

Nine patients give a definite history of trauma, closely associated with the development of a lesion in the traumatized area. In two cases in which the correct diagnosis had been established, another lesion of a similar character developed immediately after trauma. In no case in which trauma preceded a lesion did the traumatized area become healed prior to the development of the lesion. The trauma has occurred in the form of contusions or of sprains, and never as lacerations.

Initial Lesion.—Twenty-eight of the patients had a single lesion as the first external manifestation of the disease; in twenty-six of these it consisted of a subcutaneous swelling without skin lesions, and in two of ulcers of the skin.

Fourteen of the patients had two or more than two lesions developing simultaneously, and in the case of involvement of the skin the lesions were often multiple. Of these fourteen patients, six had skin lesions, four of which were nodular and two ulcerative, while seven consisted of subcutaneous abscesses, and one of generalized adenopathy. In one case, the only lesion present involved the fallopian tubes and an ovary. In seven cases, the initial lesion or lesions were undetermined. Of the twenty-eight single external primary lesions, six occurred on the wrist or hand and seven on the foot or ankle. Two occurred in the region of the elbow and two in the region of the knee. Four patients had subcutaneous swellings on the back, two on the wall of the chest, and two in the region of the sternoclavicular junction. Two lesions occurred on the face and one on a shoulder. Two patients had well proved pulmonary tuberculosis concomitantly.

Diagnosis.—The diagnosis in five cases of this series has resulted from the suggestion of the roentgenologist as to the probable nature of the lesion, prior to the recorded suspicion of any other physician having contact with the case. A few unique roentgenographic features will be pointed out later.

* Read before the Section on Pathology and Physiology at the Eightieth Annual Session of the American Medical Association, Portland, Ore., July 10, 1929.

Three cases were unsuspected until autopsy, and in one of these until routine examination of the spleen. This case will be referred to again in the group of unique cases.

The diagnosis in four cases was unsuspected until examination of surgically removed tissues by the pathologist. The various means by which the diagnoses were established will be discussed in the pathologic section of this paper.

Course and Duration.—In forty-two cases, the average length of time before seeking medical attention was 4⅔ months. The average length of time following the appearance of the initial symptoms, before the diagnosis was established (in forty-six cases) was eight months. Accordingly, it is evident that in the usual case the diagnosis is not established until 3⅓ months after first consulting a physician. In eleven cases, the time before the correct diagnosis was made has been particularly long, averaging 19.2 months, these patients being the ones with chronic lesions usually involving bone and almost invariably mistaken for tuberculosis.

Data on Patients with a History of Previous Infection of the Respiratory Tract

Number	Age	Sex*	Racial Extraction	Respiratory Symptoms	Time Prior to Initial Lesion	Initial Lesions	Time Before Diagnosis Established	Total Duration
1	31	♂	Filipino	Productive cough	6 weeks	Supraclavicular swelling	4 months	6¼ months
2	32	♂	Mexican	Productive cough	3 weeks	Small ulcer on chin.....	1½ months	1½ months
3	38	♂	Mexican	Productive cough	2 weeks	Small ulcers on skin of face, neck and chest	1½ months	1½ months
4	28	♂	Negro	"Cold"	10 weeks	Multiple cutaneous nodules...	2½ months	13 months
5	39	♂	Negro	"Cold" and cough.....	4 weeks	Swelling over manubrium....	5¼ months	Unknown
6	27	♂	Russian	"Influenza, pneumonia"...	4 weeks	Swelling on right ankle.....	7¾ months	Unknown
7	3	♂	Mexican	"Influenza"	6 weeks	Subcutaneous abscess of scalp and right ankle	5 months	6½ months
8	20	♂	Negro	"Spitting blood"	6 weeks	Subcutaneous abscess of chest wall	2½ months	3 months
9	3¼ mo.	♀	Mexican	"Double pneumonia"	7 weeks	Deep cervical abscess.....	3¼ months	3¼ months
10	27	♂	Filipino	Productive cough, fever, night sweats	Indefinite	Four skin lesions on face....	2¾ months	2¾ months
11	48	♂	Mexican	"Pneumonia"	16 weeks	Right ankle	8 months	Unknown
12	3	♂	White	"Pneumonia"	12 weeks	Subcutaneous abscess of chest wall	42½ months	Living
13	7	♀	Negro	"Terrible cold"	12 weeks	Cervical spine	5¼ months	Living
14	39	♂	Mexican	Persistent and productive cough, pains in chest	Indefinite	Miliary tubercles in spleen...	16¾ months	16¾ months
15	39	♂	White	"Pneumonia and pleurisy"	2 weeks	Small abscess of lip.....	3¼ months	Living

* In this column, ♂ indicates male; ♀, female.

In only twenty-seven of the cases is the total duration known, since many patients left the hospital after the diagnosis was established, their following course being unknown. The mean of these twenty-seven is 9¼ months. The extremes are 1 month and 62½ months. Six cases have had a total duration of less than three months, and autopsy and clinical observations indicate that these present pulmonary lesions primarily.

While the figures given appear to indicate that the diagnosis is not made in the ordinary case until a month before death, in the twenty-seven cases in which the total duration is known the diagnosis has been established an average of 3.4 months before death, but this is after the disease has more than half run its course.

White Blood Count.—Thirty-one white counts on twenty-one patients average 13,020 cells per cubic millimeter. Nine of the counts were under 10,000 per cubic millimeter. Twenty-seven differential counts on nineteen patients gave an average polymorphonuclear percentage of 74.

Comment.—The majority of cases occur between the ages of 20 and 40. Males predominate over females, 41 to 9.

The majority of the patients have contact with soil or animals, either directly or indirectly. One patient developed pulmonary symptoms while threshing beans. The vast majority, being negroes, Mexicans and other laboring types of foreigners, are generally accepted as uncleanly in their mode of life.

Thirty-four per cent of the series give a definite history of infection of the respiratory tract preceding the initial external lesion by about six weeks, and in two of these, in whom the infection seemed fulminating or was heavily seeded, sizable external lesions apparently had insufficient time in which to develop.

The shortest total duration is one month, the longest 62½ months, and the average 9¼ months.

A mild leukocytosis with a relatively low polymorphonuclear percentage is not uncommon.

PATHOLOGIC OBSERVATIONS

Diagnosis.—In thirty-six cases the diagnosis was initially established by smear or culture; practically all diagnoses which were recorded from a smear were later confirmed by culture, biopsy, inoculation of guinea-pigs or autopsy. In nine cases the initial diagnosis was made histologically. Of these instances, four were biopsies with the diagnosis suspected, four were routine examinations of surgical specimens with the diagnosis unsuspected, and one was a routine examination of autopsy tissue in which the diagnosis was not suspected. In one the original diagnosis was made by inoculation of guinea-pigs, and in one it was made prior to admission, the method not known. The diagnosis in three cases was made only at autopsy by means of smears and subsequent cultures, the diagnosis having been previously unsuspected.

Six patients had had previous laboratory examination in the presence of the suspected diagnosis; in some cases the examination was repeated many times with negative results, when finally a positive result was obtained. Such negative examinations have included the usual sodium hydroxide mounts, and cultures on Sabouraud's medium, as well as one biopsy and one inoculation of guinea-pigs.

This should emphasize the point that the choice of material for diagnostic effort should be given some consideration. The pathologist, if possible, should choose his own material or be consulted by the one obtaining the material for study. The possibility of some cyclic change of the organism, even within the tissues, might explain some negative results in the examination of apparently excellent material.

Autopsies.—Eighteen patients in this series have been examined post mortem. Thirteen had lesions involving the tissues of the head and neck. In six there were lesions involving the skin and, in five, subcutaneous abscesses. Three had osteomyelitis of the cranial bones with epidural or subcutaneous abscesses. Three patients had meningitis and small granulomatous lesions within the brain substance. In one case (previously reported by Hammack), an organism was found with an oat kernel in an esophageal ulcer. Eight patients had lesions involving the shoulder girdle or the upper extremities. Sixteen had lesions of the thorax or its viscera, and fourteen of these had miliary involvement of the lung. Two had pneumonic consolidation simulating tuberculous pneumonia, one also having miliary involvement. One patient had fibrocaseous nodules without miliary involvement. Eight had caseation of the hilar nodes and six involvement of the bony thorax, either ribs or sternum. Two had involvement of the heart, one a granulomatous pericarditis and one an endocarditis, both due to the coccidioides organism. The latter observation was made at autopsy on a patient previously at this hospital, who later died at the Santa Clara County Hospital, the report being sent by Dr. Frederick F. Proescher, pathologist. Two patients had lesions of the abdominal wall. The spleen showed lesions in nine cases, the liver and kidneys in six each. One patient each had involvement of femoral, inguinal and retroperitoneal nodes, and the epididymis and perirectal tissues.

The bones of the pelvis or lower extremity were involved in ten cases. The iliac bone was involved in three cases, the sacrum in three, both patellas in two, and the region of the knee in five. Four patients had involvement of the ankle, both ankles being involved in two cases. Three patients had erosion of the bodies of the vertebrae.

Unique Cases.—The two cases mentioned involving the heart are particularly interesting. Granulomatous endocarditis and pericarditis due to *Coccidioides immitis* have not previously been reported to our knowledge. Another case discovered in the routine examination of tubes and an ovary, by Dr. R. M. Crumrine of our laboratory staff, is particularly striking. Four months before entrance, the patient had had acute pain in the lower part of the abdomen which was treated with ice bags to the abdomen. After two months the patient returned to work, only to have a similar attack two months later, at which time two diseased tubes and one ovary were removed. Many organisms could be demonstrated in the lesions, both tubes and the ovary. The patient developed an abdominal sinus following the operation from which a culture of *Coccidioides immitis* was obtained. She left the hospital after the sinus was partially healed and returned to the outpatient clinic for six months for treatment with colloidal copper, after which time she did not return but was in good health when last seen.

Another case of interest was in a child of 3 months, who was said to have had a severe attack of pneumonia five days after birth, and when 27 days old began to develop a cervical swelling. The child entered the hospital with a large cervical swelling and severe dyspnea and died shortly after. An autopsy by one of us (H. A. B.) revealed a large cervical abscess extending posterior to the trachea, containing thick yellowish mucoid pus in which many organisms were demonstrated. We believe this to be the youngest patient so far recorded.

In one case the lesion was encountered in the routine microscopic examination of a spleen following a post-mortem examination. The man had a bronchiectasis and chronic suppuration of the lung, without any other notable condition except some apparently healed tubercles in the spleen. On microscopic examination, a tubercle surrounded by giant cells containing the organisms was found. This seemed to be a healing lesion and certainly suggests that some cases may go on to spontaneous recovery without diagnosis.

Comment.—In the majority of cases the diagnosis can be made during life by patient examination of wet 10 per cent sodium hydroxide mounts unless the patient is in the late stages of the disease, when the organisms are more easily found. The diagnosis can almost invariably be confirmed by cultures on Sabouraud's medium. We have also found that a 1 per cent tyrosine agar is suitable for the growth, which in our experience occurs much faster than on Sabouraud's medium. Two patients have had positive blood cultures obtained at autopsy.

Next to the cultural method in importance is the histologic. Good biopsies will at times reveal the diagnosis when smears and cultures have failed. Inoculation of guinea-pigs will rarely reveal the diagnosis when other methods have failed.

In three cases coming to autopsy in which the total duration was six weeks or less, the most extensive lesions were found in the lungs, and in two of these consisted of pneumonic consolidation. The other was miliary in type. In these cases, somatic lesions were few and small.

In eighteen cases coming to autopsy, including these three, the distribution of the lesions has been recorded and several unique cases have been mentioned.

ROENTGENOGRAPHIC OBSERVATIONS

In forty cases, roentgenograms pertinent to the pathologic process were obtained. Thirty-six of these present lesions involving bone forty-one times. Some of these forty-one lesions involve several bones, so that, grouping the carpals and tarsals as units and counting each other long or flat bone as one, the actual number of times that a bone or group of bones has been involved, as shown on the roentgenograms, is sixty-five. Twenty times this involvement was in the shoulder girdle or upper extremities, eleven times in the bony thorax, thirty times in the pelvic girdle or lower extremities, with no lesion involving the femur; three times in the spine, and once in the cranial bones.

This distribution is in no sense an accurate index to the distribution of the lesions, as a number of patients had known lesions not examined roentgenographically. The distribution as given in the pathologic section of this paper is more nearly an accurate index.

Of twenty-four lesions involving long bones, three times as many occurred at the epiphyseal ends as in the shafts.

Evidence of Healing.—Only eleven of the forty-one lesions show evidence of repair in the form of sclerosis, as visualized on the roentgenograms. Twelve others show periosteal reaction adjacent to the active lesion. This was so marked in one child that a roentgenographic diagnosis of periosteal sarcoma was made. The impression gained from these cases is that periosteal reaction occurs much less frequently in older persons than in those under 20 years of age.

Pulmonary Conditions.—Twenty-six of the forty cases give positive evidence of active lesions on the

films of the chest. The lesions are of two types: a diffuse shadow, sometimes to the degree of pneumonia, usually seen early in the course of the disease, and a miliary involvement seen late.

A diffuse density was situated in one hilar region three times, in both hilar regions six times, in the right upper lobe of the lung three times, in the right lower lobe six times, in the left upper lobe twice, and in the left lower lobe once. In two cases there was superior mediastinal broadening. Miliary involvement was shown in seven cases, four of which also showed diffuse shadows.

Some cases presented no evidence of pulmonary lesions at the time of examination, and we suspect that in some of these, at least, an earlier diffuse shadow may have been present and may have disappeared. We have no series of films definitely substantiating this point, though we have films showing a change of location in the diffuse shadow from one side to the other, as evidence that the diffuse shadow can entirely disappear from a previous location.

Pleural fluid was present in one child having bone destruction of two adjacent ribs.

Comment.—A diffuse shadow, at times to the degree simulating pneumonia, occurs in many cases examined roentgenographically. This occurs in the right lower lobe twice as frequently as in any other part of the lung fields, though it may occur in any portion, and twice as frequently in both hilar regions as in one.

Lesions of long bones are three times as common in the epiphyseal ends as in the shafts.

Peculiar sites of bone destruction occurring in patients in a geographic region where coccidioides infection is known to exist should arouse the suspicion of the roentgenologist, and he may at times suggest the diagnosis before it has been considered by others in closer contact with the case. This is particularly true if tuberculosis of the bone is suspected and if the films of the chest give no evidence of pulmonary tuberculosis. Massive shadows of soft tissue in extremities appear in some films showing no destruction of bone and may also suggest the diagnosis.

An arrested bone lesion is a rather uncommon occurrence in this series, though one or two cases subjected to copper therapy have yielded such observations. Sites of destruction which should particularly arouse suspicion are the tibial tubercle, the patella, the body or acromial process of the scapula, and the ribs.

SUMMARY

It is our impression that there are three main clinical types of patients:

1. Patients whose pulmonary infection is heavily seeded, the pathologic process being extensively pulmonary, and who usually die before many or extensive somatic lesions have time to develop.

2. Patients whose pulmonary infection is moderately seeded, who many times have pulmonary symptoms to which little attention is paid, but who develop multiple somatic lesions in which the organisms multiply and which become extensive with consequent blood-borne return infection to the lung, taking the form of miliary involvement, the duration of life usually varying around the average of this series—that is, nine months.

3. Patients in whom the pulmonary infection is very lightly seeded, who develop but one or two somatic lesions to which the body reacts to a degree that heals the lesion or causes it to become very chronic, such cases lasting for years or until resistance is so lowered that a lesion of sufficient activity can develop to cause a miliary pulmonary involvement.

The pathologist should choose or supervise the choosing of his material for diagnosis.

The roentgenologist may at times be of service in suggesting the diagnosis before it is suspected by the clinician.

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ABSTRACT OF DISCUSSION

DR. WILLIAM OPHULS, San Francisco: I believe there is no doubt that the majority of cases of coccidioidal granuloma are respiratory infections, because at autopsy one almost always finds a primary pulmonary focus, even though clinically the skin lesion may have been apparently primary. As to the exact mode of the infection, we are still very much in doubt. Recently, infection with coccidioides has been discovered in animals, in cattle as well as sheep. It is, however, unlikely that human beings contract the disease from the infested animals. The infection in the two instances probably comes from the same source. The most likely hypothesis is that this fungus grows freely in nature, possibly on decaying vegetable material. The spores become detached and are mixed with dust. When the infected dust is inhaled, they are carried into the lungs. We obtained an interesting history from a man who drove cattle from northern California to southern California. He passed from the Sacramento into the San Joaquin Valley. While the caravan was camping in the vicinity of Stockton a heavy wind raised so much dust that all the men nearly choked to death. This man, who was in charge of the cattle train, shortly afterward developed signs of pulmonary infection. When he arrived in southern California his condition was diagnosed as pulmonary tuberculosis and for this reason he was advised to stay in southern California until the pulmonary lesion had healed. When in the course of time he had shown improvement, he returned to northern California. About a year or two afterward he came to the outpatient department of our medical school, suffering from what was diagnosed as tuberculous arthritis of one of his finger joints. On histologic examination we discovered the lesion to be one of coccidioidal granuloma. This seems to be a clear case of respiratory infection by the inhalation of contaminated dust out in the open country. I did not hear the authors mention any intestinal lesions. We have been searching for intestinal lesions in coccidioidal granuloma, but we have not been able to find any until recently, when remarkable lesions were found in the intestine in a fatal case of coccidioidal granuloma. They consisted in rounded elevated plaques several centimeters in diameter, with necrotic surfaces. The microscopic examination of these peculiar lesions, however, did not reveal the characteristic histologic changes of coccidioidal granuloma, nor did we find any of the parasites in them, even on careful examination of numerous sections. It remains doubtful, therefore, whether the intestinal lesions were really due to coccidioidal granuloma. Spontaneous recovery or at least complete quiescence of the disease undoubtedly does occur. In one of our cases all we could find was an old scar in the lungs, and no active lesions. In the center of the focus there were parasites, most of them degenerated but some of them apparently still living.

DR. ROY W. HAMMACK, Los Angeles: This analysis shows the extremely variable distribution of the lesions in this infection. It also shows the variation in type. Although Drs. Evans and Ball did not go thoroughly into the various types of lesions which they found, I think their printed paper will show more definitely that they did have many types, from the granulomatous lesions of various organs to the rather acute suppurative lesions. While the lesion which is produced by this infection is similar to that of tuberculosis, many of the lesions are certainly more acute and have more tendency to suppurate than those of tuberculosis. The skin lesions, which seem to be thought of by many as characteristic of this disease, are not so common, as I think this series in tabulation will show. If there are skin lesions, they are usually secondary to subcutaneous or deeper suppuration, although occasionally there are metastatic lesions in the skin. Once in a while these are difficult to distinguish from blastomycosis, but I

believe that this disease is not primarily a skin disease, as we think blastomycosis usually is, but a systemic disease. If there are skin manifestations, they are secondary. I do not believe the authors drew conclusions from the frequent respiratory symptoms, but I think, as Dr. Ophuls does, that they are significant, and that they usually mean a primary respiratory infection. In fact, the disease is probably nearly always a primary respiratory infection. The length of time which was required for diagnosis, that is an average of more than three months in this series, shows that it is important that a laboratory examination of material from granulomas or atypical suppurative conditions be made. I think, too, that the pathologist should be consulted in the choice of material for examination. I hope that the authors in their published report will take up and straighten out the confusion in the number of cases which have been reported from southern California. I plead guilty to adding to the confusion. Some of the cases from the Los Angeles General Hospital which have been included in this series were reported on from the roentgenologic standpoint by Dr. Bowman and by Dr. Taylor, and later from the clinical and pathologic standpoint by Lacey and myself without proper correlation.

DR. NEWTON EVANS, Los Angeles: It is valuable to recognize that this disease is one of a group of clinical conditions produced by a group of similar organisms—organisms which produce a systemic and usually a fatal infection. This group includes not only *Coccidioides immitis* but the organism of blastomycosis, the organism producing the so-called torulosis, and a fourth, rather similar organism, the so-called histoplasma producing the histoplasmosis of Darling. Within the past few months, at the General Hospital in Los Angeles, we have encountered examples of all these types of infection. They belong to a group, looked at from the standpoint of the medical scientist, of the higher fungi which have marked similarity of morphology and which produce, as I have already indicated, systemic infections that are often fatal. In addition to the rather unusual case which was mentioned in the paper of a localized infection, apparently localized in the tubes and one of the ovaries, and the rather unusual conditions in other cases which were mentioned, of an endocarditis and of a pericarditis, it might be interesting to refer to another case seen at the General Hospital which was not included in this series, and in which operation was done by Dr. Carl Rand, neurologic surgeon. The clinical diagnosis was a spinal cord tumor, and the lesion was a markedly localized coccidioidal granuloma producing symptoms of spinal cord tumor. It compressed the spinal cord and produced definite symptoms of spinal cord tumor.

DR. J. A. MCINTOSH, Memphis, Tenn.: The authors mentioned that cultures of infected material sometimes do not yield the organism, and that the organism can be found on histologic section. In cultures of suspected material for *Blastomyces* it is better not to distribute the material over the surface of the medium in thin smear but to dump it in one place on the slant. It is surprisingly easy to cultivate *Blastomyces* from infected material if this is done. The same technic applies to *Coccidioides* or to *Coccidioides immitis* in infected material.

DR. HOWARD A. BALL, Los Angeles: I always had supposed that the absence of intestinal lesions might be explained on the basis that there were no ulcerative lesions in the lungs. I assumed that the intestinal lesions of tuberculosis were due to the swallowing of the organisms. In these cases the pulmonary lesions do not break down and ulcerate in the same manner as in tuberculosis and I have accepted this as the explanation for the absence of the intestinal lesions. In all, sixty-one cases have now been reported by Los Angeles authors. Thirty-three have been reported by W. B. Bowman (five), R. G. Taylor (eleven), R. W. Hammack and J. M. Lacey (eight), H. P. Jacobson (six), G. S. Kalichman and L. J. Madsen (one), and C. W. Rand (two). Twenty-eight of the cases reported in our paper today are new ones that have been studied by Dr. Evans and myself. Some of them have been considered by Dr. Jacobson in reporting his results with colloidal copper therapy in a paper in the Section on Dermatology and Syphilology. Fifty-four of the sixty-one cases have been treated in the Los Angeles County General Hospital.

Clinical Notes, Suggestions and New Instruments

GAS BACILLUS INFECTION FOLLOWING TONSILLECTOMY

G. A. SMITH, M.D., MONTGOMERY, W. VA.

The case reported here appears to me to be of particular interest since I am unable, after a careful and complete search of the literature, to find a report of a case of gas bacillus infection following tonsillectomy.

REPORT OF CASE

A white American woman, aged 31, divorced, a stenographer, was referred to me, July 13, 1928, the chief complaint being recurrent tonsillitis. The patient's mother had tuberculosis. The patient had had influenza in 1918 and again in 1922. She had had smallpox in 1910 and measles, mumps, whooping cough and chickenpox in childhood. An appendectomy, right salpingectomy and right oophorectomy had been performed six years before. She had complained of flatus and constipation since the operation. Three years prior to the operation she had had cystitis, which lasted five weeks. Menstruation had been established at the age of 15 years, with leukorrhea, dysmenorrhea and metrorrhagia. She had one child living, 11 years old, and had had one abortion of three months' gestation in 1920. She had been told by her physician in 1924 that she had incipient pulmonary tuberculosis, although the sputum examinations at that time were negative for tubercle bacilli. The Wassermann reaction, taken at the same time, was negative. She consulted another physician two years later complaining of a cough and general malaise. A report of the examining physician shows that he found no loss in weight, no particular fatigue, but a chronic cough. He advised tonsillectomy.

The patient was referred to me for tonsillectomy, July 13, 1928. Examination on that date showed the eyes normal, the right ear normal, the left ear canal dry, but the tympanic membrane retracted and the nose normal. The tonsils were slightly hypertrophied with many pockets of degenerative change. The crypts were filled with plugs of cheesy and mucopurulent material. Physical examination of the heart and lungs was negative except for a few moist râles at the apexes. The abdomen showed a scar in the lower median line from the former operation. There was no tenderness, distention or masses. The extremities appeared normal. The diagnosis was chronic tonsillitis. Laboratory examination of the catheterized specimen of urine gave negative results except for an occasional red blood cell, a few pus cells and some epithelial cells. Tonsillectomy was advised.

July 14, the patient had a tonsillectomy under a general anesthetic. The anesthetic was nitrous oxide gas induction followed by drop ether. The Beck-Schenk instrument was used and the tonsils came out clean, leaving the tonsillar fossae clean and smooth. There was no hemorrhage during or after operation. The patient had a comfortable postoperative day and was discharged from the hospital the following morning after having eaten a full breakfast. She went home and to bed. Later that afternoon she complained of feeling very uncomfortable. There was elevation of temperature and her head ached. I was called to see her at 4 a. m. the following day, July 16, and found her suffering from intense headache, pain in the left eye and pain in the extremities; she had had a chill. The temperature was 103 F., the pulse 120, and respirations 24. There was a symmetrical enlargement of the left side of the neck and face below the angle of the jaw extending up to the malar bone. The swelling was very tender on palpation, and crepitation was present. The left tonsillar fossa was closed, with edema of the pillars and soft palate. The right fossa was open, dry and healthy. The chest was clear. She was given morphine hypodermically, and the left side of the head was covered with ice packs. The condition continued. The emphysema moved in the direction of the edema, which moved forward beneath the level of the orbital cavity. The patient was sent back to the hospital with a clinical diagnosis of cellulitis of the face and neck caused by the gas bacillus. A speci-

men of urine taken on readmission was negative except for an occasional red blood cell, a few pus cells, and occasional granular casts. A blood count showed 7,800 white blood cells, with 72 per cent polymorphonuclears, 25 per cent small lymphocytes, 2 per cent large lymphocytes and 1 per cent transitionals. A smear from the left tonsillar fossa showed many long curved and straight rod-shaped organisms surrounded by transparent gram-positive capsules, resembling *Bacillus aerogenes-capsulatus*. Cultures were made from the specimen under anaerobic conditions. A positive culture was obtained of the same organism with much gas production in the medium. From its cultural characteristics and from animal experimentation, the laboratory was of the opinion that the organism was *Bacillus welchii*.

July 20, under local anesthesia, the left side of the face was incised just below the angle of the jaw. The incision followed the course of the lower border of the mandible from the ramus forward. The incision extended through the skin, fascia and platysma. A large amount of gas escaped under pressure, together with about 2 ounces of thin, brown, foul-smelling pus, which was also full of gas bubbles. Another wide incision was made in the neck on the same side and below the first incision along the anterior border of the sternomastoid muscle. This incision liberated a large amount of the same material. The whole area on the side of the neck and face was undermined by the infection from the orbital cavity above to the clavicle below. Hemostats could be passed under the skin in all directions. The muscle tissue was dark brown and very necrotic. The skin covering the whole area was bronzed. Dilute hydrogen dioxide was used freely by injections and irrigations through the incisions. Rubber drains were inserted and the wounds left open. The postoperative treatment of the wounds consisted of frequent hydrogen dioxide dressings and irrigations. The side of the face and neck was kept under hot packs. Smears from the draining material contained the same organism as that from the tonsillar fossa.

On the same date *Bacillus perfringens* antitoxin was obtained from H. K. Mulford Co. The patient was given 20 cc. intramuscularly and 20 cc. intravenously every eight hours until 180 cc. in all had been used. Her general condition seemed to improve for two days. The wounds drained freely and the infection did not spread outside the limits described. July 24, the patient began showing marked signs of toxemia, the temperature going as high as 105 F. and the pulse rate to 140. Fluids had been forced throughout hospitalization. On this day chemical analyses of the blood showed: nonprotein nitrogen, 60.4 mg. per hundred cubic centimeters, urea nitrogen, 39.8 mg., and sugar, 181.83 mg. Liver function studies revealed an icterus index of 8, and a sedimentation index of 29. The blood Wassermann reaction was negative. Urinalysis was the same as before except for an occasional cast. A blood count showed red blood cells, 3,700,000; hemoglobin, 72 per cent; white blood cells, 9,800; polymorphonuclears, 82 per cent; small lymphocytes, 17 per cent, and large lymphocytes, 1 per cent.

July 25, the patient had a transfusion of whole blood, 600 cc., from a donor of group 4. Following the transfusion her axillary temperature rose to 107.6 F. and she had a chill lasting fifteen minutes, the pulse being very weak. The temperature soon returned to 104.6 F., which had been the axillary temperature for the twenty-four hours before the transfusion. Saline solution was given intravenously, but the patient weakened and died, July 26, at 10:20 p. m.

Postmortem examination showed crepitation in the soft tissues of the neck. There was a pyoid exudate in the right tonsillar fossa. The left tonsillar fossa was covered with necrotic material, the tissues being soft and boggy. This condition extended radially in all directions.

There was about 120 cc. of dark yellow fluid in the pericardial sac and about 30 cc. of similar fluid in each pleural cavity. At the apex of the left pleural cavity there was some hemorrhagic discoloration of the soft tissues, apparently an extension of the process described. There were healed scars at both apexes, and a purulent bronchitis and basal congestion with edema. Histologically, an antemortem thrombus was noted in a vein near the pleural scar, the latter being also covered with acute inflammatory exudate. Two small areas of indistinct cross striations were noted in the heart muscle. There was considerable fatty change in the liver. Old adhesions were noted extending between the gallbladder and the ileum. There was splenic atrophy. The epithelium of the collecting tubules in the kidneys was slightly swollen, granular and indistinct. A left hydrosalpingitis with chronic fibrous adhesions was also noted. A smear from incisions in the neck revealed encapsulated, large, thick, gram-positive rods.

COMMENT

Death occurred twelve days after tonsillectomy. The onset of the infection occurred a little less than thirty-six hours following operation. The fact that the patient lived eleven days from the time of the onset of the infection may give us a more favorable prognosis through the use of gas bacillus antitoxin in the future for the care and treatment of gas gangrene. Had it not been that the site of the infection in this particular case was situated in the face and neck wherein more radical incision and drainage could have been established, the patient might have recovered.

A NEW AND ESSENTIAL POINT IN THE BLOCKING OF THE INTERNAL LARYNGEAL NERVE *

LAWRENCE SCHLENKER, M.D., ST. LOUIS

No treatment for relief of the pain in laryngeal tuberculosis promises so much, yet few therapeutic procedures end so often in complete disappointment, as that of blocking the internal laryngeal nerve.

When one is called on to treat the patient with advanced throat disease a problem at once presents itself, for one is soon made witness to the futility of the many local applications. An attempt to place entire dependence on narcotic drugs will meet with incomplete if not disagreeable results, and it is plain that the deliberate destruction or removal of tissue for the purpose here spoken of is not widely recommended. If none of these bring the looked-for relief, there remains the expedient of interfering with conduction of the pain sensation from its source.

After a large number of ventures toward this end, I feel that the question as to the cause of the many disappointments encountered can be answered as follows: Failure is not due to minor differences in the composition of the fluid injected; the particular percentage of alcohol contained or additional drugs added does not materially affect the end-result. Nor can it be due to not selecting the right point for entering the neck. Fetterolf [1] has shown that 15 minims (1 cc.) of injected alcohol will spread through an area of from 1 to 2 inches in the surrounding tissues of these parts; any point in the thyrohyoid space should therefore answer. Finally, it is unthinkable that lack of results can ordinarily be attributed to an anomalous position of the nerve. Failure is too frequent for this explanation, and results are often inconstant on the one side of the neck in the same subject. Evidently, as experience has gone, almost all the ill success came from failure to deposit the anesthetic fluid in the identical plane of body tissue in which the nerve lay. Whenever a layer of fascia or other tissue was left interposed, to all intents and good purposes the solution might as well not have been introduced.

Blocking of the laryngeal nerve can be performed by the attending physician with the facilities he has at hand; if the first attempt is unsuccessful, the undertaking may be repeated. If one keeps well within the thyrohyoid space, no large blood vessels are struck but, to make for certainty, the plunger of the syringe may be drawn back. As the nerve is a purely sensory one, motor disturbances do not follow.

Though a third of all cases of pulmonary tuberculosis show laryngeal involvement, the far greater number of these, fortunately, are of the mild, strictly localized type. There are times, however, following some acute infection, or as the part of a general dissemination of the tuberculous disease, when the formerly discrete lesion takes on a malignant form, spreading rapidly, and treatment of the throat becomes a serious problem. It is then that the measures spoken of come to mind and to trial, and nerve blocking will be found the single one giving any considerable or prolonged relief. Should the ulcera-

* Read before the St. Louis Medical Society, Sept. 17, 1929.

1. Fetterolf, George: Seventh Report of the Henry Phipps Institute.

tion have spread to the pharynx, fauces or soft palate, structures not supplied by the internal laryngeal nerve, blocking is still called for; the percentage of relief obtained may exceed expectation. The idea of blocking this particular nerve originated with Hoffmann [2] in 1908.

Before describing the technic used, it may be well to portray in a tactile way the anatomic structures through which the needle must pass. Uppermost is the rather tough layer of tissue made up of skin, superficial fascia, platysma muscle, and deep cervical fascia. Next comes a mass of loose areolar tissue which to the operator's touch feels like a space. The floor of this space is formed by the thyrohyoid membrane, a structure which again offers some resistance to the needle. Over this membrane the internal laryngeal nerve courses, before penetrating to distribute itself to the mucous membrane of the larynx. The point to be emphasized here is that, to insure a successful blocking, the needle should pierce the thyrohyoid membrane but should not be pushed so deeply as to pass through the wall of the larynx.

TECHNIC OF OPERATION

For the operation the patient is placed on his back in the recumbent or semirecumbent position. A folded pillow under the neck produces enough hyperextension to widen the intercartilaginous spaces and get the chin out of the way, but extension should not be so extreme as to be uncomfortable or to cause a constant desire to swallow. Nor is the head to be turned far to the side; the neck muscles must be relaxed. Finally, the patient should be explicitly instructed not to talk, swallow or otherwise move the larynx while the needle rests in his neck. A 1.5 cc. glass syringe with a slip-on tip, and a sharp three-fourths inch needle of 25 gage, are the only instruments required. The solution I am at present using is made up of cocaine hydrochloride, 1 grain (0.065 Gm.), phenol, 1 minim (0.06 cc.), water, 20 minims (1.25 cc.), and alcohol, 80 minims (5 cc.).

When all is ready for the operation, 15 minims (1 cc.) of the solution is drawn into the syringe, the patient is helped to the proper position, and the skin over the thyrohyoid space is swabbed with alcohol. Freezing the skin with ethyl chloride is unnecessary. The needle is now removed from the syringe and held at its butt by the thumb and forefinger of the right hand, while the syringe is laid where it can be quickly and easily reached. The left hand is then employed, the index and middle fingers supporting the larynx from the opposite side, while the thumb serves in locating the point of entrance. At approximately the middle of the selected side of the thyrohyoid space, the needle is firmly pushed through the resistant first layer of tissue in a downward and backward direction toward the posterior portion of the upper border of the thyroid cartilage. Into the layer of apparent space next encountered, the needle is gently dropped until it again meets some resistance, the thyrohyoid membrane. The needle is now transferred to the left hand while the right fits the syringe to the needle. Using the combination of syringe and needle as a point, the operator carefully picks up the membrane as though it were a layer of tissue paper. Having transfixed the membrane, and again admonishing the patient not to talk or swallow, he deposits the entire amount of fluid at once and the needle is quickly withdrawn.

With the entrance of the alcohol the patient experiences a smarting momentarily. Later he may speak of a sensation of a lump in the side of the neck, which usually causes little actual discomfort and disappears in a few days. Within a few minutes the original pain and dysphagia should have disappeared or have so nearly done so as to leave the throat in a comfortable condition. If this is not the case, it may be taken for granted that the solution was not placed in actual contact with the nerve. When the fault can be laid to having carried the needle so deeply as to enter the laryngeal aperture, known by the patient coughing up the fluid, the operation may be repeated at once. But when failure is due to not having gone deep enough, more solution must not be injected into these tissues for several days; otherwise a degree of inflammatory edema may follow sufficient to cause real difficulty in breathing. For this reason an interval of at least three days should elapse between a blocking of the two sides of the throat. In cases in which the subsequent edema is sufficient to cause difficulty in swallowing, the hot, moist towel has given more relief than the icebag.

Successful blocking confers relief for several weeks, several months, and often permanently. Should pain return, the operation may be repeated.

SUMMARY

The essential point in successful blocking of the laryngeal nerve is the bringing of the solution into intimate contact with the nerve, to accomplish which the fluid must be deposited in the exact plane of tissue in which the nerve lies. By piercing the thyrohyoid membrane, this objective is most certainly attained and a relief secured which is immediate and complete, or practically complete.

3515 South Grand Boulevard.

2. Hoffmann: München. med. Wchnschr., 1908, number 14.

Council on Physical Therapy

THE COUNCIL ON PHYSICAL THERAPY OF THE AMERICAN MEDICAL ASSOCIATION HAS APPROVED THE FOLLOWING REPORT.

H. J. HOLMQUEST, Secretary.

UVIOL-JENA ULTRAVIOLET TRANSMITTING GLASS ACCEPTABLE

The window glass known as Uviol-Jena, manufactured by Schott and Gen., Jena, Germany, and submitted to the Council for consideration by the Fish-Schurman Corporation, New York, is stated to be "a glass which transmits the biological ultraviolet rays of the sun."

The manufacturer claims that "Uviol-Jena glass in a thickness of 2 millimeters transmits at the time of installation about 60 per cent of the ultraviolet rays of a wavelength of 302 millimicrons." The manufacturer further claims that, "even after 'solarization,' it still transmits about 48 to 45 per cent of these same rays."

In support of the claims made for this material, the manufacturer submitted a photostatic copy of a transmission test conducted by the Bureau of Standards. Measurements were made at 302 millimicrons before and after exposure for ten hours to a quartz mercury vapor arc lamp at a distance of 15 centimeters.

Transmission at 302 Millimicrons

Sample	Thickness in Mm.	Transmission New	Transmission Exposed to Mercury Lamp 10 Hrs. at 15 Cm.
529 A	2.00	69.8	52.1
529 B	2.03	70.3	50.0
529 C	2.02	71.5	50.7
529 D	2.02	69.5	51.8
529 E	1.98	71.3	52.3
Average	2.01	70.5	51.4

The Council on Physical Therapy declares the ultraviolet ray transmitting glass known as Uviol-Jena acceptable for inclusion in its list of accepted devices for physical therapy.

Gonorrhea.—This unpleasant and loathsome disease is directly responsible for an enormous economic loss to the world. Mortality statistics do not reveal many casualties due to this social enemy but this is indeed a fallacy. A search of hospital records and death certificates would show "pelvic infection" recorded as the cause of demise in literally thousands of cases. How many of these may be traced directly to the neisserian organism? Gonorrheal endocarditis is frequent; gonorrheal arthritis totally incapacitates hundreds of people each year. Many other complications occur, causing misery and loss of usefulness. It would seem that these facts, in this age of broad thinking and freedom of speech, would take the secrecy away from this grave enemy of the human race and force itself on a broader public knowledge.—Black, T. N.: Some Observations in the Treatment of Gonorrhea, *J. Arkansas M. Soc.*, November, 1929.

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SATURDAY, DECEMBER 14, 1929

THE ANNUAL SUBSCRIPTION AND FELLOWSHIP DUES

In this issue of THE JOURNAL is inserted a colored folder for use in remitting the annual subscription and fellowship dues. This is unusual for several reasons. The slip inserted is a clever little device designed to permit use as an envelop ready for mailing as soon as a check for the correct amount is placed inside. However, the name and address of the sender must be written in before the folding process begins. Then fold toward the center from both sides, fold upward, insert the check, moisten and seal, drop in the box, and the job is done. No need for addressing—and the postoffice charges the postage at this end. The annual subscription and fellowship dues are seven dollars now. By action of the House of Delegates and the Board of Trustees, the increase has been made to permit expansion of activities and the planning and erection of the new building that will house them. There are, furthermore, eight special journals and *Hygeia* to which one may subscribe at the same time. The use of this folder by Fellows of the Association is the means of saving time, effort and money at the Headquarters of the Association. It saves the sending of some thousands of special bills; it saves the writing in of names and addresses; it permits staggering of the work instead of having all the bills go out at once and most of the returns come in at one time. Each year more and more Fellows are learning to give their personal help in this way. Won't you join the thousands this year? Get the folder, write the name, indicate the special journals, fold and seal, drop in the box. The postoffice and the Headquarters will do the rest. We thank you!

THE MANIFESTATIONS OF RENAL DISUSE

Two contrasting biologic manifestations are familiar to all students of the interrelations of human morphology and the function of parts of the body. One is the hypertrophic response of organs when exceptional demands are made on them. The muscles grow in size through use. A kidney may show a compensatory hypertrophic enlargement when it is compelled to assume part of the excretory function of its mate; in fact, both kidneys may increase to a size beyond the average "normal" for the species when certain stimuli augment the renal activities. The other peculiarity is usually spoken of as the atrophy of disuse. It is strikingly true of muscles. Whether this principle applies with equal cogency to glandular structures is not clear. A few years ago Hinman [1] ventured the hypothesis that a kidney after sustaining a temporary injury, as, for example, a temporary period of ureteral obstruction causing hydronephrosis, will go on to complete or almost complete atrophy if allowed to function in competition with its hypertrophic mate. Thus, if the ureter of a kidney is obstructed for two or three weeks, this kidney becomes hydronephrotic and its mate undergoes hypertrophy. If at the end of this time the obstruction to the ureter is relieved, the hydronephrotic kidney supposedly will be placed at a distinct disadvantage. According to the theory of renal counterbalance, the kidneys enter into functional competition and the weaker kidney eventually goes on to complete or almost complete atrophy.

If the phenomenon of a renal atrophy of disuse without the possibility of subsequent restoration were indisputable, it would present a serious problem in the surgical treatment for certain renal lesions. Temporary suppression of function would tend to produce a permanently functionless and worthless organ. Referring to a specific instance applicable to renal surgery, if an injury to one kidney should be continued over a sufficiently long period to allow the opposite kidney to become fully hypertrophied, the injured kidney would eventually go on to complete atrophy even though the injurious agent was removed. It would be useless, therefore, to carry out a plastic operation on a hydronephrotic kidney if its mate had become fully hypertrophied. The plastic operation would have to be supplanted by a removal of the hydronephrotic kidney, since any operation for the relief of an obstruction would be useless so far as restoration of function in that kidney was concerned. The theory would find application also in cases of unilateral stone in which there was destruction of parenchyma in the involved kidney and accompanying hypertrophy in its mate. The operation of pyelotomy or nephrotomy would be supplanted here by nephrectomy. Also in the treatment of bilateral nephrolithiasis the period of time between the

1. Hinman, Frank: Renal Counterbalance: An Experimental and Clinical Study with Reference to the Significance of Disuse Atrophy, Tr. Am. A. Genito-Urin. Surg. **15**: 241, 1922; Renal Counterbalance, Arch. Surg. **12**: 1105 (June) 1926.

operations for the removal of the stones from each kidney should not be long enough to allow one kidney to undergo hypertrophy.

These comments, formulated by Joelson, Beck and Moritz [2] of the Western Reserve University School of Medicine in Cleveland, induced them to undertake further experimental considerations of the problem of "renal counterbalance." For example, they produced ureteral obstruction in one kidney; then, by relief of the obstruction after various intervals, the injured kidney was placed "in competition" with its hypertrophied mate. The experiments definitely showed that the injured kidney could undergo a remarkable degree of repair and hypertrophy if the demand was placed on it. According to the Cleveland surgeons their researches failed to demonstrate any renal atrophy of disuse and, in fact, strongly suggest that such atrophy does not occur.

FUNCTIONAL AND PATHOLOGIC RENAL CHANGES AND EXPERIMENTAL NEPHRITIS

Since the time of C. F. W. Ludwig, the function of the kidney has been the subject of active experimental investigation. Such investigation concerned first the determination of the factors influencing and controlling the function of the kidney as a whole. More recent work has sought to analyze the functions of the structural elements of the organ. The importance of the glomerulus in the formation of urine, by a process chiefly of filtration, seems established; but whether the specialized tubular epithelium functions predominatingly or only as a selective resorptive mechanism or as an actively secreting one appears to be a question still awaiting final solution.

Since the time of Richard Bright, the pathologic anatomy of the human kidney has held the attention of the pathologist. The anatomic classification proposed by Bright has served as a useful basis for the correlation of clinical evidences of disturbed renal function with the pathologic changes noted post mortem. Only in comparatively recent years has there appeared a tendency to subdivide the processes that Bright grouped together under nephritis, and to make clinical and anatomic distinctions between nephrosis, a noninflammatory degenerative process involving primarily the tubules, and nephritis, an inflammatory process involving the kidney diffusely and the vascular apparatus particularly. On the one hand are those who, following Fahr, hold that the tubular epithelial changes, in what is termed by them nephrosis, are not inflammatory reactions. On the other hand are those who, led by Aschoff, maintain that the epithelial changes are reactions to harmful stimuli and that the edematous swelling, degeneration and necrosis of the tubular epithelium are inflammatory in nature, just as are similar alterations in the vascular interstitial tissues. Whereas the function of the kidney has lent itself well to experimental investigation, some of it rather ingenious as to the methods employed, the pathology of the organ has yielded less successfully to experimentation. True pathologic alterations may be readily brought about by experimental methods, but attempts at the reproduction in lower animals of a type of involvement similar to that which is most frequent in the human kidney have not been markedly successful. Focal inflammatory lesions of infectious origin can be produced experimentally, marked tubular changes identical with those of nephrosis can be set up, but the progressive, diffusely sclerosing process is not readily reproduced.

The experimental production of chronic nephritis probably requires a longer period of observation than has usually been allotted. MacNider [1] of the University of North Carolina School of Medicine has presented in a Harvey Society lecture facts relating to functional and pathologic changes in chronic nephritis, based on experimental work on dogs in progress for twenty years. Some of the animals were under constant observation for more than four years. The method of experimentation consisted in the causing of acute renal injury by the subcutaneous injection of a single standard dose of uranium nitrate. In proper dosage this substance is known to have a marked nephrotoxic action, which is limited to the proximal convoluted tubule. Although there is slight swelling of the glomerular capillary endothelium during the stage of acute injury, the reaction on the part of the tubular epithelium specifically injured is similar to that of acute nephrosis, if one adopts this term. The functional evidences of renal involvement during the acute stage are polyuria, the presence of albumin and granular casts in the urine, diminished excretion of phenolsulphonphthalein, retention of nitrogenous waste products in the blood, and depletion of the alkali reserve. A certain proportion of the animals die during the acute stage. Of those that survive, some make a complete functional recovery, which is associated with anatomic recovery; others are not able to effect a functional readjustment and exhibit the evidences of chronic renal dysfunction, which is associated with anatomic changes of a chronic nature. The manifestations of abnormal function are, as pointed out by MacNider,[2] polyuria, the presence of a slight amount of albumin and of hyaline casts in the urine, subnormal excretion of phenolsulphonphthalein, moderate retention in the blood of nitrogenous waste products, and a normal alkali reserve. The anatomic evidences of progressive, chronic involvement were degeneration of

2. Joelson, J. J.; Beck, C. S., and Moritz, A. R.: Renal Counterba'ance, Arch. Surg. **19**: 673 (Oct.) 1929.

1. MacNider, W. deB.: Urine Formation During the Acute and Chronic Nephritis Induced by Uranium Nitrate: A Consideration of the Functional Value of the Proximal Convoluted Tubule, Am. J. M. Sc. **178**: 449 (Oct.) 1929.

2. MacNider W. deB.: The Development of the Chronic Nephritis Induced in the Dog by Uranium Nitrate: A Functional and Pathological Study with Observations on the Formation of Urine by the Altered Kidneys, J. Exper. Med. **49**: 387 (March) 1929.

tubular epithelium, intertubular fibrosis, and fibrosis, obliteration and hyalinization of glomeruli.

Of great interest, from the standpoint of function, is the process of recovery, on the part of the tubular epithelium, from the acute injury. In animals which make a complete functional recovery, the injured highly specialized epithelium of the proximal convoluted tubules is replaced by regenerated epithelium of the same type, and, as the evidence of a return to a functional normal indicates, of normal function. In animals with chronic functional changes, the injured epithelium is replaced by a low epithelium that grows upward from below and that is evidently less highly specialized functionally. Such less specialized epithelium is, as MacNider [3] has shown, less susceptible to a second dose of the nephrotoxic agent than is the normal original or regenerated specialized epithelium. This increased resistance is probably not, as some have termed it, an immune state of the epithelium but an expression of altered function, of inability of the less specialized epithelium to excrete the nephrotoxic agent and hence to be harmed by it. This increased resistance of the recovered kidney is one of the main arguments adduced by Aschoff [4] in support of his view that the tubular changes of so-called nephrosis are actually inflammatory in character, since it is interpreted as a defense reaction to an injurious agent, which, according to Aschoff, is the criterion of inflammation. On this point, Oertel [5] of McGill University has said: "Consider for a moment that highly differentiated epithelial cells, under the necessity of foreign invasion, so to speak, throw aside their higher attributes and produce an offspring which, not only morphologically but also functionally, is distinct." Anatomically, the kidney of the recovered chronic stage is an altered organ in that one type of epithelium is replaced by a less specialized type; physiologically, it is an altered organ in that the regenerated, less specialized epithelium does not have the function of the normal epithelium that it replaces. Teleologically considered, the process is a beneficial one, since the presence of the less highly specialized type of epithelium protects the kidney against harm by agents that would injure normal tubular epithelium. Unfortunately, injury sufficient to bring about the described change is associated with progressive fibrosis and glomerular change, processes similar to those of human chronic interstitial nephritis. The fibrosis in its turn causes further tubular injury, a vicious circle being thus established. In its altered structure and function, the kidney of experimental chronic nephritis is similar to the kidney of chronic Bright's disease, of which Oertel [5] has said: "The late manifestations in the functional derangement of this type of nephritis seem to depend on new structural forms and arrangement, which are not comparable to the physiological. The organ is a new functionating unit."

What conclusions may be drawn from the experimental work discussed as to the function of the normal renal tubular epithelium? MacNider's [1] interpretation is that "these final experiments lend emphasis to the functional value as secretory units of the proximal convoluted tubules." From the standpoint of the pathogenesis of chronic nephritis, the long continued experiments have shown that a single injury, which involves primarily the tubular epithelium, may result in a progressive, productive, interstitial type of lesion. It does not mean to say that in every case of human chronic interstitial nephritis the renal lesion has been brought about in this way.

3. MacNider, W. deB.: The Functional and Pathological Response of the Kidney in Dogs Subjected to a Second Subcutaneous Injection of Uranium Nitrate, J. Exper. Med. **49**: 411 (March) 1929.

4. Aschoff, Ludwig: Renal Secretion and Renal Diseases, in Lectures on Pathology, New York, Paul B. Hoeber, 1924.

5. Oertel, Horst: The Anatomic Histological Processes of Bright's Disease and Their Relation to the Functional Changes, Philadelphia, W. B. Saunders Company, 1910, pp. 99, 182.

NONSOMATIC ANTIBODIES

Protein hypersensitiveness has been a major clinical puzzle for two decades. There is hardly a basic fact in reference to allergic states on which all immunologists agree. One experimenter, for example, reports the passive transfer of hypersensitiveness from man to laboratory animals, while a second worker denies such transfer. A German clinician quotes crucial tests proving to his satisfaction that hereditary allergy and acquired protein hypersensitiveness are physiologically identical, while a French clinician quotes equally convincing evidence of their nonidentity. An impartial observer can but conclude that there must be something radically wrong in one or more of the basic concepts from which all clinicians and laboratory immunologists are reasoning. A recent experimental study by Cooke and Spain [1] of the division of immunology at the Cornell University Medical College indicates that one such basic error is the almost universally accepted unitarian concept of antibody function.

According to this dominant immunologic orthodoxy, specific antibodies are chemically and physiologically identical in all organs and tissues of the body. A nonsomatic antibody, i. e., an antibody active in one organ or tissue and wholly inert in other parts of the body, is inconceivable. Yet this is exactly the type of antibody apparently demonstrated by the Cornell workers.

Cooke and Spain report the passive transfer of specific hypersensitiveness to the normal human skin from both hereditary and acquired clinical hypersensitiveness. With the hereditary type, however, they were unable to effect such transfer to the guinea-pig uterus. Under other experimental conditions they report the exact opposite, ready passive sensitization of the guinea-pig uterus but a complete absence of passive skin sensitization. This lack of correlation

1. Cooke, R. A., and Spain, W. C.: A Comparative Study of Antibodies Occurring in Anaphylaxis, Serum Disease and the Naturally Sensitized Man, J. Immunol. **17**: 295 (Oct.) 1929.

leads them to conclude that "skin sensitizing and smooth muscle sensitizing antibodies are separate and distinct." Unless it can be shown that there is an error in their technical methods, "there is no reasonable ground for not assuming that antibodies may have as great and as varied a degree of cellular specificity [in the body of the patient] as they have antigenic specificity."

This apparent demonstration of nonsomatic or tissue-specific antibodies seems to be a fulfilment of one prophecy from the newer immunologic theories [2] and the prophecy implied in Rosenow's alleged elective localization of bacteria.[3]

Current Comment

ANOTHER EXPERIMENT IN MIDDLE CLASS MEDICAL CARE

In February, 1930, the trustees of the Massachusetts General Hospital will open a new unit called the Baker Memorial. The Rosenwald Fund Committee has agreed to underwrite one half of the deficit in operation of this hospital during its first three years up to a maximum of $150,000, with the understanding that the deficit will not exceed $75,000 in any one year. The Baker Memorial has been designed for the care of sick people of moderate means. It is pointed out in the *Massachusetts General Hospital News* that the care of the sick in this unit will include voluntary curtailment of physicians' fees so that those entering the institution will pay a maximum fee of $150 for any illness or operative care and that the maximum fee for uncomplicated obstetric service and hospital care will be $100. Only members of the staff of the Massachusetts General Hospital and of the Massachusetts Charitable Eye and Ear Infirmary and the obstetric staff will be permitted to practice in this institution. This hospital has been definitely planned and constructed, and is to be quite definitely operated, as a middle class institution. The employment of special nurses will be discouraged. Ward maids, nurses' helpers and floor clerks will be utilized so that nurses will devote all their time to actual bedside nursing. A special social service department will control the class of patients to be admitted. The institution will have 333 beds, part of which will be used at first for the interns and the nurses, since special buildings for this purpose have not yet been provided. There are to be eighty-eight beds in single rooms, twenty-four beds in two-bed wards, twenty-eight beds in four-bed wards, and eighteen beds in cubicles. For obstetric patients there will be twelve beds in single rooms, six beds in two-bed wards, and eight beds in four-bed wards. Private rooms will cost $6 a day, cubicle beds $4 a day, and the two-bed and four-bed wards will vary between these figures. Nursing, food and ordinary drugs are included in this price. Special fees will be charged for laboratory work and for roentgen-ray work. It will be interesting to see whether this experiment can operate successfully and pay its own way. It will also be interesting to see whether there is any considerable percentage of the middle class who can save enough money to take care of themselves under these conditions. The fees are not apparently much greater or much less than those charged today in most of the hospitals in the United States.

2. Manwaring, W. H.: The Newer Knowledge of Bacteriology and Immunology, University of Chicago Press, 1928, chapter LXXXI, p. 1078.
3. Rosenow, E. C.: The Newer Knowledge of Bacteriology and Immunology, chapter XLIII, p. 576.

THROMBO-ANGIITIS OBLITERANS

A malady of the blood vessels and circulation described as obliterating endarteritis has been recognized for half a century or more. In 1908, Leo Buerger of New York clearly differentiated a clinical and pathologic entity characterized as an inflammatory disease involving the deep-seated arteries and veins and the superficial veins of the extremities. This is today known as thrombo-angiitis obliterans. In the early stages of the process a thrombus develops; this later undergoes organization or healing, with ultimate complete occlusion of the affected vessels. The assumed association of Buerger's disease with blood vessels of the extremities is widespread. According to studies of Barron and Linenthal [1] in Boston, however, thrombo-angiitis obliterans should not be regarded as involving the vessels of the extremities exclusively. In fact, they aim to direct attention to the more general distribution of the disease in contradistinction to what has previously been believed concerning it. Barron and Linenthal assert that the malady attacks the walls of the blood vessels, both veins and arteries, throughout the entire vascular system, the cranial, thoracic and abdominal vessels as well as the vessel of the extremities. The signs and symptoms are characteristic of the vessels involved, so that the lesion affecting the arteries of the brain may give rise to a hemiplegia of varying degrees of severity; or, should the coronary vessels be involved, the characteristic symptoms of coronary thrombosis or angina pectoris may ensue. The Boston study reminds one of the description of the chronic disease process as a race between the formation of a collateral circulation and the occlusion in the main arterial channels. It is further pointed out that the vessels involved are slowly occluded and, owing to this slow occlusion, there is an opportunity for collateral circulation to be established. This explains the fact that the nutrition of the part supplied by the occluded vessel is maintained, and a patient may go on for many years without nutritional disturbance of the parts involved. The process in the arterial tree does not spread by extension from a single focus but may occur at different levels in an artery and in various vessels at different periods. Thrombo-angiitis obliterans thus becomes "a generalized disease that may affect any part of the arterial tree, including the coronary arteries, the abdominal arteries and the arteries of the brain." Accordingly the occasional cases of angina pectoris and coronary thrombosis that occur early in life without any evidence of vascular disease elsewhere may, in some instances at least, be due to thrombo-angiitis obliterans of the coronaries and not to arteriosclerosis.

1. Barron, M. E., and Linenthal, Harry: Thrombo-Angiitis Obliterans, Arch. Surg. **19**: 735 (Oct.) 1929.

Association News

ANNUAL CONGRESS ON MEDICAL EDUCATION, LICENSURE AND HOSPITALS

Preliminary Program of Meetings to be Held in Chicago, Feb. 17, 18 and 19, 1930

The next Congress on Medical Education, Licensure and Hospitals will be held in the Palmer House, Chicago, February 17, 18 and 19. The preliminary program is as follows:

LIVE TOPICS IN PRESENT-DAY MEDICINE

HON. RAY LYMAN WILBUR, M.D., Presiding
Secretary of the Interior, Washington, D. C.

Report of the Committee on the Cost of Medical Care
Harry H. Moore, Ph.D., Director of Study, Committee on the Cost of Medical Care, Washington, D. C.

Medical Care for People of Modern Means
Malcolm L. Harris, M.D., President of the American Medical Association, Chicago.

Relation of Federal, State and Municipal Governments to Hospital Maintenance
William Gerry Morgan, M.D., President-Elect of the American Medical Association, Washington, D. C.

Current Problems in Medical Education
Willard C. Rappleye, M.D., Director of Study, Commission on Medical Education, New Haven, Conn.

MEDICAL TEACHING PLANTS (Illustrated)

Medical Teaching Plants
Charles R. Bardeen, M.D., Dean, University of Wisconsin Medical School, Madison.

The New Cornell
G. Canby Robinson, M.D., Dean, Cornell University Medical College, New York.

Special Laboratories in Teaching Hospitals
Paul H. Fesler, Superintendent, University Hospital, Minneapolis.

TEACHING OF OBSTETRICS

JENNINGS C. LITZENBERG, M.D., Presiding
Professor of Obstetrics and Gynecology, University of Minnesota School of Medicine, Minneapolis

Fundamentals of Obstetric Practice
Frank W. Lynch, M.D., Professor of Obstetrics and Gynecology, University of California Medical School, San Francisco.

Clinical Teaching of Obstetrics
J. Whitridge Williams, M.D., Professor of Obstetrics, Johns Hopkins University School of Medicine, Baltimore.

Laboratory Courses in Obstetric Pathology
John O. Polak, M.D., Professor of Obstetrics and Gynecology, Long Island College Hospital, Brooklyn.

INTERNAL MEDICINE

MERITS OF THE FULL-TIME SYSTEM OF TEACHING

RALPH H. MAJOR, M.D., Presiding
Professor of Medicine, University of Kansas School of Medicine, Kansas City, Kan.

From the Standpoint of a Full-Time Teacher
David P. Barr, M.D., Busch Professor of Medicine, Washington University School of Medicine, St. Louis.

From the Standpoint of a Teacher on Half-Time
Reginald Fitz, M.D., Associate Professor of Medicine, Harvard University Medical School, Boston.

From the Standpoint of a Practitioner and Teacher
Arthur D. Dunn, M.D., Professor of Clinical Research, University of Nebraska College of Medicine, Omaha.

IMPORTANCE OF PATHOLOGY IN MEDICINE

D. J. DAVIS, M.D., Presiding
Dean, University of Illinois College of Medicine, Chicago

Pathology as a Specialty
Louis B. Wilson, M.D., Director, Mayo Foundation for Medical Research, Rochester, Minn.

Pathology in a University Hospital, with Especial Reference to the Education of House Officers
Howard T. Karsner, M.D., Professor of Pathology, Western Reserve University School of Medicine, Cleveland.

The Pathologists' Opportunities in Medical Research
James Ewing, M.D., Professor of Pathology, Cornell University Medical College, New York.

The Pathologist in a Private Clinical Laboratory
Kenneth M. Lynch, M.D., Professor of Pathology, Medical College of the State of South Carolina, Charleston.

HOSPITAL PRESCRIBING

HON. RAY LYMAN WILBUR, M.D., Presiding
Secretary of the Interior, Washington, D. C.

The Selection of Proprietary Versus Nonproprietary Drugs in Hospital Prescribing
Ernest E. Irons, M.D., Clinical Professor of Medicine and Dean, Rush Medical College, Chicago.

Evaluation of Therapeutic Remedies in the Hospital
Torald Sollmann, M.D., Professor of Pharmacology and Materia Medica and Dean, Western Reserve University School of Medicine, Cleveland.

The Uses of Proprietary and Medicinal Foods in the Hospital
McKim Marriott, M.D., Professor of Pediatrics and Dean, Washington University School of Medicine, St. Louis.

Staff Cooperation with the Hospital Pharmacist
William Gray, Ph.G., Pharmacist, Presbyterian Hospital, Chicago.

OTHER HOSPITAL PROBLEMS

AUSTIN A. HAYDEN, M.D., Presiding
Treasurer of the American Medical Association, Chicago

Hospital Administration
Walter S. Goodale, M.D., Superintendent, Buffalo City Hospital, Buffalo.

Present Requirements of an Intern Hospital
Nathan P. Colwell, M.D., Secretary of the Council on Medical Education and Hospitals of the American Medical Association, Chicago.

HOSPITAL DEPARTMENTS OF RADIOLOGY

A. U. DESJARDINS, M.D., Presiding
Pathologist, Mayo Clinic, Rochester, Minn.

The Requirements of a Department of Radiology in a Large Intern Teaching Hospital
Henry K. Pancoast, M.D., Radiologist, University of Pennsylvania Hospital, Philadelphia.

The Requirements of a Department of Radiology in a Large Intern Teaching Hospital
P. F. Butler, M.D., Head of the Department of Radiology, Boston City Hospital, Boston.

The Requirements of a Department of Radiology in a Small Hospital
Henry J. Ullmann, M.D., Radiologist, Cottage Hospital, Santa Barbara, Calif.

The Relation of a Hospital Department of Radiology to the Private Radiologist
L. R. Sante, M.D., St. Louis.

MEDICAL LICENSURE

The Medical Profession and Medical Licensure
Holman Taylor, M.D., Secretary, State Medical Association of Texas, Fort Worth.

Legislative Obstacles in Obtaining Adequate Medical Laws
J. R. Neal, M.D., Chairman, Legislative Committee, Illinois State Medical Society, Springfield.

Law Enforcement Procedures
Stanley H. Osborn, M.D., and Henry Albert, M.D., State Health Commissioners, respectively, of Connecticut and Iowa.

Administration of Medical Practice Acts
Henry M. Fitzhugh, M.D., Secretary, Board of Medical Examiners, Baltimore.

Basic Science Laws and Medical Licensure
Walter L. Bierring, M.D., Secretary, Federation of State Medical Boards, Des Moines, Iowa.

Fundamentals of a Uniform Medical Practice Act
Harold Rypins, M.D., Secretary, New York Board of Medical Examiners, Albany.

PHYSICAL THERAPY

RICHARD B. DILLEHUNT, M.D., Presiding
Dean, University of Oregon Medical School, Portland, Ore.

The Value of Physical Therapy in Practice
Merritte W. Ireland, M.D., Surgeon General, Medical Department, United States Army, Washington, D. C.

The Teaching of Physical Therapy
Irving S. Cutter, M.D., Dean, Northwestern University Medical School, Chicago.

A Hospital Department of Physical Therapy
By a representative of a hospital having a well developed department of physical therapy.

From the Standpoint of a Practitioner of Physical Therapy

TRAINING OF TECHNICIANS

Training of Hospital Technicians
Philip Hillkowitz, M.D., Chairman, Board of Registry, American Society of Clinical Pathologists, Denver.

Prerequisites and a Proposed Course of Training for Clinical Laboratory Technicians
W. D. Stovall, M.D., Director, State Laboratory of Hygiene, Madison, Wis.

ORGANIZATIONS REPRESENTED

Participating in this congress will be the Council on Medical Education and Hospitals of the American Medical Association, the Federation of State Medical Boards of the United States,

and the American Conference on Hospital Service. At the Palmer House, also, during the same week will be held a joint conference of the State Hospital Associations of Wisconsin, Illinois, Indiana and (unofficially) Michigan. During the same week, also, it is understood that a meeting will be held of the Central Council on Nursing Education.

Special correspondence with various officials of state medical licensing boards this year gives assurance of an unusually large attendance, thereby guaranteeing a helpful and interesting conference.

REDUCED RAILWAY FARES

An effort to secure reduced railway fares for the congress will again be made this year with better prospects for success. The required number of receipts showing full fares paid on the trip to Chicago has been reduced from 250 to 150. These reduced fares will apply to friends and relatives as well as to those regularly invited to the conference.

Be sure to obtain *a certificate receipt for your fare to Chicago*, however small it may be, so that those coming from distant states or across the continent will have the benefit of the one-half return fare. This receipt, after being countersigned by an official of the passenger associations, who will be present at the Palmer House, will entitle its holder to the reduced fare on the return trip.

DINNERS

All in attendance at the congress, ladies included, will be invited to dinners as follows:

Monday Evening. 6:30 p. m. Special addresses on medical education and practice. Informal.

Tuesday Evening. 6:30 p. m. Discussions on medical licensure. Informal.

MEDICAL BROADCAST FOR THE WEEK

The American Medical Association Morning Health Talks and Evening Health Hints from Hygeia

The American Medical Association broadcasts daily at 10 o'clock, Central Standard Time, with the exception of Friday, when the health message is delivered at 9:45, over Station WBBM (770 kilocycles, or 389.4 meters).

The program for the week of December 16-21 is as follows:

December 16. "Problem of Sweets for Children," by Dr. John M. Dodson
December 17. "Superfluous Hair," by Dr. John M. Dodson.
December 18. "Medical News," by Dr. J. F. Hammond.
December 19. "Humidity in Your Home," by Mr. H. J. Holmquest.
December 20. "Medical and Legal Insanity," by Mr. J. W. Holloway, Jr.
December 21. "Keep Disease Germs Out of Your Mouth," by Dr. John M. Dodson.

Evening Health Hints from Hygeia, 8 o'Clock, Central Standard Time

December 16. The Breed of Men.
December 17. Tuberculosis in Children.
December 18. Good Eating Habits.
December 19. Thumb Sucking.
December 20. Adenoids.
December 21. Appendicitis.

THE DETROIT SESSION

Exhibit by Section on Dermatology and Syphilology in the Scientific Exhibit

The Section on Dermatology and Syphilology has appointed the following members of the Committee on Section Exhibit: J. H. Besancon, M.D., Detroit; C. W. Finnerud, M.D., Chicago, and F. D. Weidman, M.D., Philadelphia.

The committee announces that the Section on Dermatology and Syphilology again will be represented in the Scientific Exhibit at Detroit. The exhibits will embrace syphilis in all aspects, from etiology to treatment. While the material is abundant in the specialty, the committee will welcome photographs and other material from as large a representation as possible in order to make the exhibit cosmopolitan, as it should be, and also for the purpose of adequate selection.

The members of the specialty are requested to take inventory of materials that might be exhibited and communicate with Fred D. Weidman, M.D., Medical Hall, Thirty-Sixth Street and Hamilton Walk, Philadelphia. A circular letter giving information concerning this exhibit, together with the usual application blank, has been mailed to all those who have registered in the section during the last five years. Those who have not registered in this section but who are interested in such an exhibit may obtain a circular letter and application blank by sending a request to Dr. Weidman.

All applications must be filed with Dr. Weidman not later than March 1, 1930.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ARKANSAS

Society News.—The Arkansas Medical Society will increase its dues, January 1, to $5 a year from $3. The society was granted a petition for incorporation, October 11. There appears to be no record of its having been incorporated at the time it was organized in 1875.——Dr. R. H. Whitehead, Gillett, addressed the Jefferson County Medical Society, Pine Bluff, November 5, on acute rheumatic fever, and Dr. John O. Gurney on postnatal care.

COLORADO

Psychiatric Fellowships.—The Commonwealth Fund has made an additional appropriation of $27,000 to continue a series of psychiatric fellowships at the psychopathic hospital at the University of Colorado School of Medicine, Denver. Six fellows are now in training. The new appropriation will make possible the appointment of three more in 1930 and three more in 1931 for periods of two years.

Society News.—The Medical Society of the City and County of Denver has in its library a complete set of the publications of the Sydenham Society, which volumes, begun in 1858, contain translations of many written articles designed to make available the writings and lectures of the foremost medical men in Europe. The atlases on skin diseases, obstetrics and medicine show remarkably well conditions familiar to older physicians but very rarely seen in this day and age.——Mr. Robert B. Witham has been appointed director of the Children's Hospital, Denver.

DISTRICT OF COLUMBIA

Personal.—Dr. Herbert C. Woolley has been promoted from clinical director at St. Elizabeth's Hospital to first assistant physician, and Dr. Roscoe W. Hall from medical officer to clinical director. During the last fiscal year among the resignations from the staff of St. Elizabeth's Hospital were those of Dr. Arthur P. Noyes, first assistant physician, and Daniel C. Main, medical officer.——Dr. John W. Burke has resigned as professor of ophthalmology at Georgetown University School of Medicine and has been succeeded by Dr. James N. Greear, Jr.

Report on Healing Arts Law.—The commission created to administer the new healing arts law reports that since it became operative early this year 1,212 applications for licenses have been received from physicians who were licensed under the old law; also sixty-eight applications for licenses from osteopaths; 271 applications from chiropractors and fifty-three from naturopaths. The commission has issued 538 licenses and is passing on other applications as rapidly as possible. The commission denied the applications of two osteopaths on the ground that the school from which they graduated was not approved by the commission.

In Memory of Dr. Richardson.—The Medical Society of the District of Columbia, George Washington University, and the New York Avenue Presbyterian Church held a special service, December 8, Washington, in memory of the late Dr. Charles W. Richardson, a member of the Board of Trustees of the American Medical Association. Dr. George E. de Schweinitz, Philadelphia, a former President of the Association, presided. Addresses were made by President Marvin of George Washington University; President Penniman of the University of Pennsylvania; Pres. John A. Foote of the Medical Society of the District of Columbia; Surg. Gen. Merritte W. Ireland, U. S. Army; President Merriam of the Carnegie Institution of Washington; Dr. Ray Lyman Wilbur, secretary of the interior and formerly President of the American Medical Association; James M. Beck, former president of the Society

of Fossils; Miss Enfield Joiner of World War Hospital, No. 11, Cape May, N. J., and Reverend Sizoo of the New York Avenue Presbyterian Church.

GEORGIA

Hospital News.—A movement has been started to turn over the present Grady Hospital, Atlanta, for the use of negro patients; it has been proposed to build a new Grady hospital in a new location because of the encroachment of industries and the negro population on the present site.

Society News.—Drs. Roy R. Kracke and Harry E. Teasley addressed the Fulton County Medical Society, November 21, on "Efficiency of Blood Culture Methods, with Report of New Method."——Dr. William H. Goodrich, dean of the University of Georgia Medical Department, was elected president of the newly formed Georgia and Florida Railroad Surgeons' Association at a meeting in Miami, November 20.——Dr. Harold M. Bowcock addressed the Fulton County Medical Society, Atlanta, December 5, on "Acute Leukemia."

ILLINOIS

Personal.—Dr. Leon H. Martin, who since 1925 has been director of public health and welfare of Fort Worth, Texas, has taken up his duties at Jacksonville as superintendent of the Oak Lawn Sanatorium and as city and county health officer, succeeding Dr. Warner H. Newcomb, resigned.

Society News.—At the fifty-sixth annual meeting of the North Central Illinois Medical Association, Lacon, December 3, under the presidency of Dr. Frank D. McNertney, El Paso, Dr. Arthur Sprenger, Peoria, spoke on "Prostatic Hypertrophy" with moving pictures; Dr. Elven J. Berkheiser, Chicago, on "Dislocations of the Cervical Vertebrae," and Dr. Samuel J. Burrows, Chicago, "Some Principles of General Surgery." There was a morning, afternoon and evening session. Dr. Andy Hall, state health commissioner, addressed a public meeting on health problems in Illinois.——The Franklin County Medical Society, Eldorado, was addressed, November 26, by Dr. James H. Hutton, president elect of the Chicago Medical Society, on "Endocrine Disturbances and the Common Cold."——Dr. John R. Harger, Chicago, addressed the Iroquois County Medical Society, December 12, on acute intestinal obstruction.——The Aurora Medical Society, Aurora, was addressed, November 28, by Dr. Joseph Major Greene, Chicago, on opportunities for graduate study in Europe.——The Effingham County Medical Society, Effingham, voted, December 5, to have a talk on medical news at each meeting during the coming year in addition to its regular scientific program.

Chicago

Personal.—Dr. Frank A. Lagorio, who is associated with his father at the Chicago Pasteur Institute, has been made a chevalier of the Order of the Crown of Italy by King Victor Emanuel for work among Italians in Chicago.——Dr. George Rubin has been elected commander of the Chicago Medical Post number 216 of the American Legion, succeeding Dr. Patrick J. H. Farrell, who has held that position for a number of years.

Miller Sentenced to Jail for Diploma Mill Activities.—A jury in Judge Hopkins' court, December 10, found W. H. H. Miller, former head of the state department of education and registration, guilty of conspiracy to sell medical and dental licenses to persons not qualified to practice. The sentence imposed was seven months and one day in jail and a maximum fine of $2,000. The defense attorneys filed a motion for a new trial which will be heard December 27. Miller, who was appointed to the foregoing position by Governor Len Small, was convicted in 1923, the Chicago *Tribune* says, of conspiracy to license pharmacists, at which time he paid a fine of $1,000. The governor then demanded his resignation. Others under indictment in the Illinois diploma mill investigation are said to be Harry Goldstein, alias Senator Browsky, Springfield, "Dr." Robert Lentine of Springfield, "Dr." Morris Kalmus, a New York dentist, Albert K. Barron and Jacob Crane, the latter the printer who is said to have made the fake licenses. Dr. Robert Adcox of St. Louis, whose name is familiar to readers of THE JOURNAL in connection with the Missouri diploma mill, was the chief state witness, telling of making various payments to Miller in behalf of students seeking medical license. Miller, who offered no defense to refute the state's evidence, is now a candidate for the Republican nomination for congressman at large (THE JOURNAL, June 29, 1929, p. 2176).

Society News.—Rush Medical College held its annual faculty-student reception, December 6.——Dr. Irving S. Cutter, dean, Northwestern University Medical School, addressed the Peoria City Medical Society, November 19, on "Early History of Medicine and Surgery in the Great Lakes Region."——Dr. Lucius H. P. Zeuch addressed the Chicago Historical Society, 632 North Dearborn Street, December 6, on "Pioneer Physicians and Shrines of Western Medicine." Dr. Zeuch is the author of the recent "History of Medical Practice in Illinois: Volume I, Preceding 1850," published by the Illinois State Medical Society.——Dr. Joseph B. De Lee will present a motion picture in eight reels on laparotrachelotomy with movietone before the section of obstetrics and gynecology of the New York Academy of Medicine, December 26; Dr. De Lee will show this picture before the Chicago Gynecological Society, December 19, at the Murphy Memorial Building, 50 East Erie Street.——At a meeting of the board of governors of the Institute of Medicine of Chicago the following officers were elected for the ensuing year: president, Dr. George E. Shambaugh; vice president, Dr. John L. Porter; secretary, Dr. George H. Coleman, and treasurer, Dr. John Favill.——The Chicago Council of Medical Women will be addressed, January 3, at the Medical and Dental Arts Club by Drs. Clara Jacobson on "Treatment of Early Tuberculosis," and Caroline Hedger on "Positive Health."——Dr. Hiram Winnett Orr, Lincoln, Neb., will address the Chicago Medical Society, December 18, on orthopedics, and Prof. Marshal Allan of the University of Melbourne, Melbourne, Australia, will speak on obstetrics.

IOWA

More Syphilis Than Mumps.—Reports of communicable diseases to the Iowa State Department of Health, for the week ending December 5, include eighty-nine cases of syphilis and forty cases of mumps; six of tuberculosis; one each of pneumonia and meningitis; four each of undulant fever and German measles; thirteen of diphtheria; seventy-eight of smallpox and nine of typhoid.

Society News.—Among recent gifts to the state medical library was a giant calculus weighing 1¼ pounds, given by Dr. Charles E. Ruth of Des Moines.——The Johnson County Medical Society was addressed, October 2, by Dr. Joseph H. Wolfe, who presented a case report on "Addison's Disease Complicated by Pregnancy"; Dr. Wolfe's case is considered by the secretary of the society as the twelfth of its type reported in the literature. The patient and child are both living.——Dr. Leon Asher of the University of Berne, Switzerland, addressed the Des Moines Academy of Medicine, October 8, on specific diuretics and the secretion of the kidneys under physiologic conditions.——Dr. Frank Reinsch, Ashton, was made president of the Northwest Iowa Medical Society at the recent meeting in Sheldon.

LOUISIANA

Longer Life Week.—The Orleans Parish Medical Society, New Orleans, conducted another annual longer life week, December 2, to instruct the public in the prevention of illness. Addresses were made daily by physicians in the public schools before clubs and other organizations and slogans were displayed in the street cars, theaters and business houses. The chairman of the committee on arrangements was Dr. Jerome E. Landry.

MAINE

Society News.—The Androscoggin County Medical Society, Lewiston, was addressed, September 20, by Dr. Joseph Emmons Briggs, Boston, on "Advances in Stomach Surgery."——The Somerset County Medical Society was addressed recently by Dr. Frank L. Tozier on pneumonia.

Personal.—Dr. Lorenzo Norton, East Baldwin, who disappeared about nine years ago after years of faithful service to the community, was recently located as a patient in a hospital in New York and has been returned to his family who still live at East Baldwin. Although in poor health, Dr. Norton was expected to recover. The Boston *Sun*, November 24, printed a graphic account of his service as a physician previous to his unexpected departure.

MARYLAND

Johns Hopkins to Build Clinic.—The director of Johns Hopkins Hospital, Dr. Winford H. Smith, announces that a new 350 bed clinic will be built on the hospital grounds. It will increase the capacity of the hospital by only 165 beds, as the present wards F, G and H will be replaced by the new building. Its entire bed capacity will be used for ward purposes and the poor of Baltimore, but the building will provide laboratories for research and facilities for hydrotherapy and physical therapy. The improvement will represent an expenditure of $1,300,000, which has been supplied by the General Education Board, New York. While funds have been given to endow the additional beds, the hospital needs further endow-

ment for work that is now under way. The new building is expected to be completed in about two years.

Personal.—The will of the late Dr. John F. B. Weaver, Manchester, provides that the University of Maryland School of Medicine shall be the residuary legatee of his $150,000 estate, and that it will be used ultimately to establish a professorship, fellowship or research fund.——The director of the state department of health announces the appointment of Richard C. Leonard as chief of the division of oral hygiene; Dr. Leonard came from Fargo, N. D., where he has been in charge of public health and dental activities in connection with the Commonwealth Fund Health Demonstration. Dr. Donald S. Campbell has been appointed deputy state health officer of the sixth sanitary district, comprising Charles and St. Mary's counties, and Dr. Bradford Massey, deputy state health officer of the tenth sanitary district, comprising Somerset and Worcester counties. Eleven of the twenty-three counties of Maryland have full-time health services with a health officer in charge of each, but eight counties are organized into sanitary districts, each consisting of two counties with a full-time deputy state health officer in charge of each district. The remaining four counties of the state have part-time health service.——Dr. John M. T. Finney held a surgical clinic, December 5, at the University of Maryland under the auspices of the division of medical extension.

MICHIGAN

Dr. Vaughan's Remains Will Rest at Ann Arbor.—In memory of the late Dr. Victor C. Vaughan, all classes in the University of Michigan Medical School were dismissed, Tuesday morning, November 26, during the time of the funeral in Detroit, where the body was cremated in accordance with his will. The remains will be moved to a mausoleum which is being constructed in Ann Arbor, where Dr. Vaughan spent many years as dean of the medical school. The university held a memorial meeting, December 3. President Ruthven presided and spoke on "Dr. Vaughan and the University"; Walter H. Sawyer spoke on behalf of the board of regents; Prof. Frederick G. Novy on "Dr. Vaughan's Influence in Medical Education"; Prof. Moses Gomberg on his work in medical chemistry; Dr. Guy L. Kieffer on his contributions to preventive medicine, and Prof. William H. Hobbs, "Our Colleague Dr. Victor C. Vaughan."

Personal.—Drs. Leonard J. and Yolanda S. Brunie, recently on the staff of the Battle Creek Sanatorium, have accepted positions with a group clinic at Santa Barbara, Calif.——Dr. Walter K. Slack has resigned as resident at the Presbyterian Eye, Ear and Throat Charity Hospital, Baltimore, on account of the death of his father, and returned to his home at Saginaw to engage in practice.——Dr. Jason B. Meads has been appointed coroner of Jackson County to succeed the late Frank Irwin.——Dr. Alfred E. Hollard was reappointed city health officer of Belding, November 12.——Mr. William J. Burns, executive secretary of the Academy of Medicine of Toledo and Lucas County, Toledo, Ohio, has resigned to accept a similar position with the Wayne County Medical Society, Detroit. Mr. Burns will assume his new duties, January 2.——Dr. Bernard W. Carey, formerly director of the Clarke County (Athens, Ga.), Child Health Demonstration, sponsored by the Commonwealth Fund, has been appointed director of the division of child health of the Children's Fund of Michigan, the foundation recently established with a gift of $10,000,000 by Senator Couzens. Dr. Carey's headquarters will be in Detroit.

MINNESOTA

Personal.—Dr. Oscar E. Locken was reelected mayor of Crookston at the biennial municipal election held in November.——Dr. William K. Foster, for a number of years instructor of gymnastics at the University of Minnesota, has resigned his position to enter private practice in Minneapolis.——Dr. Albert J. Chesley, Minneapolis, president of the American Public Health Association, was a guest of honor at the annual dinner of the Maryland Tuberculosis Association, Baltimore, November 19.

Society News.—Dr. Philip S. Hench, Rochester, addressed the Blue Earth County Medical Society, Mankato, October 31, on arthritis.——The Northern Minnesota Medical Association held its two-day annual meeting at Bemidji in September. Among others, Drs. Frank W. Whitmore, St. Paul, spoke on "Psychoanalysis in Reactive Epilepsy"; Albert M. Snell, Rochester, on "Recent Advances in Endocrinology"; Archibald L. McDonald, Duluth, on uterine bleeding, and Max W. Alberts, St. Paul, on "Hyperthyroidism in Children."——Revocation of the licenses of seven chiropractors was filed by the secretary of the state board of chiropractors, October 26.——Boyd S. Gardner, D.D.S., head of the dental section of the Mayo Clinic, Rochester, gave an address at the Royal Dental Hospital, London, England, November 4.——Dr. Harold E. Hullsiek presented a thesis before the Minnesota Academy of Medicine, Minneapolis, December 11, on "Adenomatous Polyps of the Sigmoid and Rectum."

Fellows Appointed.—The following physicians have been assigned to various services as fellows at the Mayo Clinic, Rochester:

Robert W. Brown, Highland, Wis.
John M. Caldwell, Jr., Augusta, Ga.
William A. Heazlett, Wilkinsburg, Pa.
Joseph M. Messick, Quantico, Md.
Jay E. Sharp, Seville, Ohio.
Raymond E. Tyvand, Barton, N. D.
James M. Bowers, Dayton, Ohio.
Herman Chor, Baltimore.
Gerald T. Church, Syracuse, N. Y.
Donald C. Collins, Hollywood, Calif.
Carl F. Doehring, Houston, Texas.
Allen E. Grimes, Jr., Vicksburg, Miss.
Theodore Lincoln Hyde, Pierre, S. D.
William W. Webster, Wray, Colo.
Harry W. Christianson, Wykoff, Minn.
Fred H. Decker, Winterset, Iowa.
Milo T. Harris, San Antonio, Texas.
Vincent J. Dardinski, Washington, D. C.

MISSOURI

Society News.—Dr. Cleveland H. Shutt, president of the St. Louis Medical Society, addressed members of the Bond, Fayette and Clinton, Ill., Madison and Montgomery county medical societies at Greenville, October 11, on gallbladder diseases, and Dr. Lionel Sinclair Luton, St. Louis, on "Common Disorders of the Heart." Dr. Luton demonstrated a motion picture on the valves of the heart in action before the Tulsa (Okla.) County Medical Society, October 21.——Dr. William H. Park, New York, addressed the Boone County Medical Society, Columbia, October 21, on "The Newer Serum Treatment of Pneumonia." The society was addressed, November 5, by Drs. Grayson L. Carroll, St. Louis, and Bransford Lewis, St. Louis, on "The Movable Kidney."——The St. Louis Medical Society was addressed, December 3, by Dr. Lester A. Millikin on "Appendicitis," illustrated; Dr. Roland W. Steubner, "The Injection Treatment of Varicose Veins," illustrated, and Drs. Herman A. and Theodore H. Hanser on "Controllable Spinal Anesthesia" with lantern slide demonstration. Dr. W. W. Duke, Kansas City, gave an address, December 10, on "Allergy as Related to the General Practice of Medicine." Dr. Vilray P. Blair is the newly elected president of the society.——The St. Louis Trudeau Club was addressed, December 5, by Dr. Frederick A. Jostes on "Treatment of Bone and Joint Tuberculosis."

The Sophomores Volunteer for Transfusions.—At a meeting of the Blood Transfusion Committee of the Community Council, St. Louis, November 15, the chairman reported that at present there are eighty-six donors on the central list. In the three years that the transfusion committee has operated, 340 transfusions have been given from 122 donors. Seventeen hospitals have used the service. Twenty-six transfusions have been given free of charge, but it is the policy of the committee to pay $25 for each transfusion of 500 cc. of blood. The donor list is on file at the Central Directory for Nurses, where calls for donors are received, and where the donor is put in touch with the hospital where his services are needed. Applications of prospective donors are received at the office of the Community Council. Laboratories which, without charge, do the blood grouping and Wassermann tests are those at the Barnes, Barnard Free Skin and Cancer, City, Jewish, St. Louis University School of Medicine and St. Luke's hospitals. The police department has a list of donors who are available for policemen and their families. Since March, 1926, the students of St. Louis University School of Medicine have been giving their blood free for transfusions for the indigent poor in various hospitals of St. Louis. Each year the sophomores volunteer their services through the office of the Student Health Service. Since March, 1926, there have been forty-five transfusions given by the students.

NEBRASKA

Society News.—The Omaha-Douglas County Medical Society was addressed, November 26, by Dr. Russell M. Wilder, professor and chairman of the department of medicine, Rush Medical College, Chicago, on "Recent Advances in Endocrinology," and by Dr. Anders P. Overgaard, who gave a demonstration of diagnostic procedure in carcinoma of the esophagus.

Examination Called Off—No Osteopathic Candidates.—The recent law, which requires that candidates for license to practice the healing arts must pass an examination in the basic sciences, has apparently stopped the flow of osteopaths into

Nebraska. It is reported that the examination scheduled for November 25-26 was called off because no one had applied for examination. During the last year or more not more than a half dozen osteopaths have been licensed in the state, and there will not be another examination until spring. The basic science law has affected the chiropractors to such an extent that not one, it is reported, has been licensed in Nebraska in two years. The board of chiropractic examiners has not been called on to function during that time.

NEW JERSEY

State Society Cooperates in Mental Hygiene Program.—The New Jersey State Medical Society is undertaking a program in cooperation with the state department of institutions and agencies to overcome the increase in mental illness. Representatives of both organizations have been in conference to plan a program which will stress the dissemination of knowledge of mental hygiene; the importance of early recognition of mental disorders; the correction of minor disturbances, and the development of means by which all persons who show signs of mental disorders may receive treatment early. At the present rate of incidence of mental illness, it was predicted that among 384,324 boys now in New Jersey public schools, probably about 19,000 would develop some form of mental disorder at some time, and that about 16,000 of the 369,429 school girls at some time would require mental hospital care.

NEW YORK

Society News.—Dr. Theobald Smith of the Rockefeller Institute for Medical Research was guest of the New York State Association of Public Health Laboratories at Albany, November 8. He gave an address on "Clinical and Pathologic Significance of Races and Varieties among Pathogenic Bacteria."——Dr. John Whitridge Williams, professor of obstetrics, Johns Hopkins University School of Medicine, Baltimore, addressed the Rochester Academy of Medicine, December 4, on "Maternal Mortality."

New York City

Third Harvey Lecture.—Dr. Ernest W. Goodpasture, professor of pathology, Vanderbilt University School of Medicine, Nashville, Tenn., will deliver the third Harvey Society Lecture at the New York Academy of Medicine, Thursday evening, December 19, on "Some Phases of the Filtrable Virus Problem."

Dr. Schroeder Leaves Hospital Department.—Mayor Walker, November 30, appointed Dr. William Schroeder, Jr., commissioner of hospitals, to be chairman of the new department of sanitation. He will take up the new duties at once at a salary, it is reported, of $25,000 a year, for a term of six years. The department of sanitation will have at least three divisions: street cleaning, sewers and sewage disposal. While there will be two other members on the sanitation commission, Dr. Schroeder will have charge of its administration. Since February 1, he has been commissioner of the recently established department of hospitals. Dr. Shroeder for about twenty-eight years engaged in the private practice of medicine, and was attending physician at several hospitals in Brooklyn.

Society News.—Clarence Cooke Little, LL.D., managing director, American Society for the Control of Cancer, gave an address on "Genetics and Cancer" at a "genetics luncheon" given by the American Institute, December 7. The institute will give an "air and sunlight luncheon," January 18, at the Hotel Astor, at which Dr. Shirley W. Wynne will be chairman; William Crocker, Ph.D., director, Boyce Thompson Institute for Plant Research, will speak on "City Air and Growth of Plants," and Edward R. Weidlein, director, Mellon Institute of Industrial Research, on studies of air pollution.——The Society of Alumni of Bellevue Hospital held its three hundred and sixty-seventh stated meeting at the Yale Club, December 4; Dr. John F. Erdmann read a paper on "Abdominal Fistula Following Operation," and Dr. John B. Deaver, Philadelphia, on "Cholangeitis and Hepatitis as a Complication and Sequel of Biliary Tract Infection."——Dr. George W. Kosmak was elected president of the Medical Society of the County of New York at the one hundred and twenty-ninth annual meeting, November 25.

Report of Medical Information Bureau.—The New York Academy of Medicine and the Medical Society of the County of New York have been conducting a Medical Information Bureau. Dr. Iago Galdston, the executive secretary, reports on about ten months' work, ending September 1. The bureau has granted 129 personal interviews, made 1,202 telephone calls, issued 1,085 letters, and received 742 letters. The newspapers made such inquiries of the bureau as: What is the bacteriophage? Who are the "medical martyrs," and in pursuit of what diseases did they lose their lives? Can "stunt flying" cure deafness? What is spinal anesthesia? Inquiries were made by individuals, one a doctor in Berlin and another in Athens, Greece. Commercial and philanthropic organizations requested information. The bureau actively engaged in fighting quackery in the newspapers. It prepared releases on several subjects, made a report on medical progress during the year and assisted advertising companies in censoring their medical advertising material. Dr. Galdston believes that the ten months' experience indicates that certain extensions of the bureau would be desirable. The number of consultants should be increased so that the burden will not fall unduly on those now serving. The bureau, he says, should issue more releases to the press and a greater effort should be made to secure the cooperation of newspapers and radio stations in combating quack advertising.

NORTH DAKOTA

Personal.—Dr. Eleanor Bohnsack was to have sailed from New York about November 28 for India to be a Lutheran medical missionary for a term of five years at Ambur in southern India. Dr. Bohnsack graduated at the University of Minnesota Medical School in 1923 and was house physician at the Minneapolis General Hospital previous to engaging in practice in Fargo.——Governor Schafer recently announced the reappointment of Dr. George M. Williamson, Grand Forks, for a three year term as secretary of the state board of medical examiners, and the appointment of Drs. William F. Sihler, Devils Lake, and Philip G. Arzt, Jamestown, as new members of the board.

OHIO

Toledo Health Officer Resigns.—Dr. Paul F. Orr, since May 1, 1928, health commissioner of the city of Toledo, has tendered his resignation, effective not later than December 15. He will engage in the private practice of medicine at Perrysburg.

Another Society Moves Away from Noise and Traffic.—The Cincinnati Academy of Medicine voted, November 25, following the report of a committee, to leave the downtown district and erect a new home on a hilltop a short distance off McMillan Street, away from the disturbance of traffic and noise. The new home will cost the academy, it is reported, about $200,000.

Testimonial to Professor Mathews.—Albert P. Mathews, Ph.D., professor of biochemistry, University of Cincinnati School of Medicine, was tendered a testimonial dinner at the Queen City Club, November 26, to celebrate his completion of twenty-five years as a professor of biochemistry. Dr. Mathews' appointment about 1905 to this chair at the University of Chicago and Rush Medical College was one of the first in medical schools in the United States. He has published an internationally known textbook on physiologic chemistry and many papers and monographs of great importance to the medical profession. Among those present at the dinner were Drs. Basil C. H. Harvey of the University of Chicago, and George W. Crile of Cleveland.

Society News.—Dr. James R. Caywood, Piqua, was elected president of the second district of the Ohio State Medical Society at the recent meeting in Springfield.——The Perry County Medical Society, New Lexington, was addressed, November 18, by Dr. John A. Riebel, Columbus, on "Relation of Absorbable Sutures to Wound Healing" and by Dr. Frank S. Lott, Columbus, on "Loose Bodies in the Knee."——Dr. Irving W. Potter, author of a widely known book on version, addressed the Toledo Academy of Medicine, December 6, on "Technic of Elective Version and Immediate Repair of Birth Canal Injuries Following Delivery."——Dr. Theodore Miller, Cleveland, addressed the Erie County Medical Society, Sandusky, November 27, on "Changing Aspects of Obstetric Practice."

Personal.—Dr. Chauncey B. Elliott, Fairport Harbor, has been appointed health officer of Lake County to succeed Dr. Walter Corey, who will resume private practice.——Dr. J. A. Spence, Crestline, who has retired as physician for the Pennsylvania Railroad after forty years' service, was presented with a "well filled" purse and traveling bag at a surprise party, recently.——Dr. Leslie L. Bigelow, assistant professor of surgery, Ohio State University College of Medicine, Columbus, addressed the medical section of the Wayne County Medical Society, Detroit, November 14, on "Medical Economics as Influenced by Social Agencies."——Dr. Edgar R. Hiatt, health commissioner of Miami County, was elected president of the Ohio Society of Sanitarians which was reorganized at the tenth annual meeting in Columbus, November 21.

PENNSYLVANIA

Society News.—At the November 14 meeting of the Cambria County Medical Society and the Johnstown Dental Society, Johnstown, Dr. Howard G. Schleiter, Pittsburgh, spoke on "Relation of Focal Infection to Cardiovascular Disease," and Sterling V. Mead, D.D.S., Washington, D. C., "Pathology of Diseases of the Mouth."

Philadelphia

Symposium on Mental Hygiene—Society News.—The Philadelphia County Medical Society, December 11, presented a symposium on mental hygiene, in which Drs. Albert C. Buckley, superintendent, Friend's Hospital, spoke on biologic and environmental factors in nervous disorders; Harvey M. Watkins, superintendent of the state school for feebleminded children at Polk, "Treatment, Training and Supervision of the Feebleminded," and Clarence A. Patten of the Public Charities Association, "The Gentle Progress of Mental Hygiene."——The Philadelphia Academy of Surgery was addressed by Dr. George P. Muller, December 2, on end-results of operation for abscess of the lung," and by Dr. Richard H. Overholt on "Diaphragmatic Hernia."——The Obstetrical Society of Philadelphia was addressed, December 5, by Dr. Donald Macomber, Boston, on "Diagnosis and Treatment of Ovarian Deficiency in Sterility," which paper was discussed by Drs. Robert T. Frank, New York, Barton Cooke Hirst and Brooke M. Anspach.——Dr. Abraham Ornsteen addressed the Southeast Branch of the Philadelphia County Medical Society, December 5, on "A New Diagnostic Triad for the Recognition of Incipient Postencephalitic Parkinsonism," illustrated by cases on the screen.——The Philadelphia Psychiatric Society commemorated the centenary of the birth of Dr. S. Weir Mitchell, December 13, at a special meeting which was addressed by Dr. Charles W. Burr on "S. Weir Mitchell, Physician," and Prof. Felix E. Schelling, "S. Weir Mitchell, Poet and Novelist."——Dr. Walter S. Cornell was elected president of the Philadelphia Public Health Association at its annual meeting, November 26, succeeding Dr. James M. Anders.——The Commonwealth Fund has appropriated $5,000 for carrying on a study of normals by Dr. Theodore H. Weisenburg at the Graduate School of Medicine of the University of Pennsylvania in an attempt to determine the basis for drawing a line between normal and pathologic conditions in speech, sensory and motor activities in children as a guide in clinical diagnosis.

SOUTH DAKOTA

Personal.—Dr. Pierre R. Pinard, Wagner, has been appointed superintendent of the Charles Mix County Board of Health to succeed Dr. Charles S. Langley, who has moved to Seattle.——Dr. Lloyd L. Cramer, Viborg, has been appointed to the staff of the Battle Mountain Sanatorium, Hot Springs.——Dr. Lorenzo N. Grosvenor, Huron, president of the South Dakota State Medical Association, addressed the annual meeting of the Black Hills District Medical Society, Deadwood, December 5, at which meeting Dr. James L. Stewart, Nemo, was made president of the district society.——The Aberdeen District Medical Society had an attendance of forty-five physicians at its November meeting; Drs. Victor J. LaRose, Bismarck, spoke on "Clinical Significance of Hematuria"; Jacob A. Bargen, Rochester, Minn., "Diseases of the Colon"; Percy D. Peabody, Webster, "Surgical Gynecologic Problems," and Harry A. Brandes, Bismarck, "Medical Management and Late Results in the Medical Treatment of Peptic Ulcer."

WASHINGTON

Spokane Opens Medical Library.—The Spokane County Medical Society opened its medical library, November 30, with a home-coming celebration to which all physicians who formerly lived in Spokane were invited. There was an all-day program, Drs. Robert C. Coffey, Portland, and Charles F. Eikenbary and Frederick Epplen, Seattle, speaking on general and abdominal surgery, reconstruction surgery and internal medicine and diagnosis, respectively. There were round-table discussions, moving picture demonstrations, papers by Spokane physicians, and a banquet. The librarian, Miss Leila Lundy, recently spent some weeks familiarizing herself with medical libraries in Chicago, including that of the American Medical Association.

Society News.—The King County Medical Society, Seattle, was addressed, December 2, by Dr. Otis F. Lamson on "End-Results Following Cholecystectomy"; Dr. Casper W. Sharples gave the memorial address. The surgical section of the society was addressed, November 18, by Drs. Victor Cefalu, Jr., and Delbert H. Nickson on "Ultimate Cause of Endemic Goiter in the Pacific Northwest: the Relationship of Surgery and Iodine to Its Specific Antigen Treatment."——The Klickitat-Skamania Counties Medical Society was addressed by Dr. Homer P. Rush, Portland, Ore., on "The Conservation of the Heart," and by Dr. Frederick A. Kiehle on "The Conservation of Vision."——The Seattle General Hospital is conducting a campaign to raise funds to erect a fifteen story hospital building.

GENERAL

New Admissions to Mental Hospitals.—Reports from 100 institutions in thirty-five states, Hawaii and the District of Columbia for March show that these hospitals for the mentally ill had a total of 151,301 patients. The number of new admissions for March was 2,795, of whom 58.9 per cent were males. Dementia praecox constituted 21 per cent of the first admissions; manic-depressive psychoses, 13.6 per cent; senile psychoses, 9 per cent; paresis, 8.8 per cent, and undiagnosed psychoses, 6.1 per cent.

Program on Animal Diseases.—At the thirty-third annual meeting of the U. S. Live Stock Sanitary Association, Chicago, December 4-6, the opening address was delivered by Dr. Morris Fishbein, editor of THE JOURNAL. A symposium on abortion was presented in which the medical profession was represented by Dr. Herman E. Hasseltine, U. S. Public Health Service, in an address on the "Relationship of Human and Animal Brucellosis." Dr. Julius H. Hess, professor of pediatrics, University of Illinois College of Medicine, Chicago, gave an exhibition of the "clinical aspects of human and animal rabies," illustrated by moving pictures. Further indication of the growing interest in the subject of contagious abortion in cattle was a round-table discussion on that subject at the University of Wisconsin, Madison, December 11, called by the departments of agricultural bacteriology and veterinary science, and by the medical milk commission of the Chicago Medical Society. Dr. James W. Van Derslice, Oak Park, Ill., presided at the session on mastitis in dairy cows.

Impostor Poses as Physician's Son.—Letters have been received from widely separated parts of the country indicating that the underworld has another novel method of imposing on physicians. Dr. Otis B. Wight, Medical-Dental Building, Portland, Ore., writes that a young man called on his friend Dr. Stephen Rushmore of Boston, November 1, and introduced himself as Dr. Wight's son, as a former student of Johns Hopkins University School of Medicine and as at present a student of Western Reserve University School of Medicine. Dr. Rushmore found that the story was not true, and that this young man has been trying to obtain funds among physicians also in New York. The impostor was about 68 inches in height with dark eyes and hair, a long narrow face, with well developed nose and chin, pale, well dressed and pleasant. When last seen he wore a fraternity pin, rubbers, gray hat and top coat, blue suit and tan shoes. Dr. Wight's only son is studying engineering at Stanford University in California.

A similar story comes from Toledo. Dr. Lewis F. Smead, chairman of the board of trustees, Toledo Academy of Medicine, reports that a young man has been traveling throughout the country representing himself as "Lewis F. Smead, Jr., intern at Hopkins," and that he has been obtaining money from Dr. Smead's classmates in Duluth, Minn., and Helena, Mont. Dr. Smead has no son by the name of Lewis F., Jr.

Medical Bills in Congress.—S. 2171, introduced by Senator Ashurst, Arizona, proposes to amend the World War Veterans' Act so as to extend from Jan. 1, 1925, to Jan. 1, 1932, the period within which if a neuropsychiatric disease and spinal meningitis, an active tuberculosis, paralysis agitans, epidemic encephalitis or amebic dysentery develops a 10 per cent degree of disability or more, the disability shall be presumed of service origin. H. R. 4811, introduced by Representative Kelly, Pennsylvania, proposes to authorize the Bureau of Mines to manufacture 1 Gm. of radium for the use of the Director of the Veterans' Bureau in the treatment of diseases of persons receiving hospitalization in United States Veterans' Bureau hospitals. H. R. 5189, introduced by Representative Evans, California, proposes to amend the World War Veterans' Act to provide compensation for death not resulting from disability or injury suffered, or disease contracted, in service, of those who have been rated totally and permanently disabled as a result of service. H. R. 5621, introduced by Representative Garber, Oklahoma, proposes to amend the World War Veterans' Act to provide that if an ex-service man had prior to Jan. 1, 1925, an arrested tuberculous disease, developing a 10 per cent degree of disability or more, the disability shall be presumed to have been acquired in the service. H. R. 5691, introduced by Representative Merritt, Connecticut, proposes to

amend the Federal Caustic Poison Act to exclude from its provisions any salt of oxalic acid other than cerium oxalate and to provide that the act shall not apply to a sale to or on the prescription of a physician, dentist or veterinarian, to the sale of fine chemicals for professional or scientific use, or to any package which by reason of its size, character or contents is not ordinarily subject to household use. H. R. 5709, introduced by Delegate Sutherland, Alaska, proposes to extend the provisions of the Sheppard-Towner Act to the Territory of Alaska.

Society News.—Section N (the medical sciences) of the American Association for the Advancement of Science will meet, December 31, during the annual meeting of the association in Des Moines, Iowa. The medical section program is being arranged under the auspices of the American Veterinary Association, which has in mind the increasing importance of animal diseases as a menace to man. The program will include work on undulant fever, veterinary parasitology, serum therapy of experimental pneumococcus and streptococcus meningitis. Section N will hold another meeting, January 1, when the president of the section, Abraham J. Goldforb, Ph.D., New York, will speak, and when reports on research on bacteriologic and serologic problems will be presented. Later Section N will meet jointly with the Iowa State Medical Society. The meeting of the American Association for the Advancement of Science will be held under the presidency of Robert A. Millikan, Ph.D., widely known physicist, and director of the Norman Bridge Physical Laboratory, Pasadena, Calif.——At the annual meeting of the Federation of American Societies for Experimental Biology in Boston, in August, Walter J. Meek, Ph.D., Madison, Wis., was made president, and Alfred C. Redfield, Ph.D., Boston, secretary. The next annual session will be at Chicago.——Dr. William F. Petersen, Chicago, was made president, and Dr. Carl V. Weller, Ann Arbor, Mich., secretary of the American Society for Experimental Pathology at the annual meeting in Boston, August 19-23. The next meeting will be in Chicago in 1930.——The National Conference of Social Work and Associate Groups will hold its fifty-seventh annual meeting in Boston, June 6-14, at the Statler Hotel. Details may be obtained from the general secretary, Howard R. Knight, 277 East Long Street, Columbus, Ohio.——At the recent annual meeting of the American Society of Tropical Medicine in Miami, Fla., Dr. Kenneth M. Lynch, professor of pathology, Medical College of South Carolina, was elected president, and Dr. Edwin Peterson, Washington, D. C., was reelected secretary. The next annual session will be held at Cleveland, Dec. 27-30, 1930.

Centenary of Invention of Braille.—A century ago, Louis Braille, a blind Frenchman, invented a system whereby the blind may read through the sense of touch. Braille, the son of a harness maker, was blinded at the age of 3 in an accident with an awl in his father's shop. When 17 years of age, he was appointed instructor in the Institution Nationale des Jeunes Aveugles in Paris. Necessity forced him to seek a more practical method of reading, and he devised the embossed system which has since borne his name. Miss Helen Keller, in the New York *Times*, says:

> The magic wand with which he wrought this miracle was a group of six dots, in which the vertical line consists of three dots and the horizontal of two. The combination of these dots in various positions produces characters to each of which we assign a particular meaning, just as the seeing do to characters of print. Sixty-three combinations of these six dots may be used. . . . Braille's invention was as marvelous as any fairy tale. Only six dots! Yet when he touched a blank sheet of paper it became alive with words that sparkled in the darkness of the blind!

Today, in every mail, hundreds of letters which the invention of braille has made possible travel from country to country, and the greatest books embossed in braille are found in public libraries. The Bible has been translated into braille, likewise the Koran in Egypt. One of the largest daily newspapers in Japan, the Osaka *Mainichi*, publishes a braille daily. There is an American braille press at 74 Rue Lauriston, Paris, France, a modern printing plant, in which about two thirds of the staff are blind. The American braille press in Paris, established eight years ago, has produced thousands of volumes for the blind in many countries—dictionaries, manuals to teach trades, school books and 700,000 pages of classic and popular music. Miss Keller expresses appreciation of the hundreds of persons who give their leisure hours to transcribing books for the sightless, notably members of the American Red Cross, the British staff of braille copyists and the volunteer transcribers in France. Other systems have been used, but about 1917, the American Association of Workers for the Blind in convention at Portland, Maine, adopted European braille as the standard. The American Foundation for the Blind was established in 1921. The influence of these two forward steps expanded until it is only necessary to print books in this one type to make them available to the blind of the world.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Nov. 16, 1929.

Cancer Research

In opening a new radium clinic at the Victoria Hospital, Burnley, Lord Moynihan said that in its attack on cancer surgery had reached its limit. It was impossible to imagine more extensive operations being done or operations with a greater measure of technical success than has been attained today. In view of the fact that one person in seven over the age of 30 died of cancer, it was necessary that something more should be done. In the last twenty years the general mortality had been lessened by 32 per cent, but the cancer death rate had gone up by 20 per cent. Much could be done by education of the people so that they could understand the problem and help the surgeons in the fight. They should understand that so far as it was a local disease cancer was always curable. Referring to radium, he said that in some cases cancer could be treated with a success which surpassed the best that the surgeon could show. But radium was such a dangerous remedy that without the most expert supervision more harm than good would be done.

Asthma Research

The formation of an asthma research council has been previously described in THE JOURNAL. Dr. A. F. Hurst, the chairman, himself a sufferer from asthma and the leading authority in this country on the disease, in an address at the Royal Institute of Public Health stated that encouraging progress was being made at the research centers established. A new and very simple treatment for children, of which dextrose formed the basis, was being tried at the asthma research clinic at Guy's Hospital with excellent results and he hoped that before long we should be able to treat cases in children successfully. This was a great step in advance and he thought that there was at last real hope for the asthmatic child. The problem in adults was more difficult, but nearly every one could obtain relief from this distressing disease by residence in the Alps at an altitude of from 3,500 to 5,000 feet. It was interesting that sufferers sensitive to cats in England and who had a violent attack when there was a cat in the room were not affected by a cat in Switzerland. He thought that every sufferer from asthma should be taught the use of epinephrine, which can be self-administered without danger.

Insane Typhoid Carriers

In Scotland typhoid carriers have furnished a problem in lunacy administration. In the Govan district an institution has been erected for the reception of these patients from all parts of Scotland. In its annual report the General Board of Control for Scotland states that "much remains mysterious as to carriers and the discovery of methods for the removal from the affected individuals of such a dangerous and painful disability." In one case a farm servant had prior to her detection as a carrier been responsible for transmitting the disease to more than 100 persons in widely separated parts of the country, owing to her frequent changes of place. She became mentally affected with delusions of persecution and hallucinations of hearing, which necessitated her incarceration. In general the mentally affected carriers do not recover, as they are mainly of a type with marked dementia. With the exception of one male, who died in an asylum, women have been the subjects. At the end of last year there were fifteen typhoid carriers in Scottish asylums —all women. A special hospital for insane carriers, capable of accommodating forty patients, has been provided. In addition to typhoid carriers there are nine dysentery carriers in the Scottish asylums. The detection of these carriers has been

a work of much difficulty. It is no uncommon consequence of becoming aware of the fact that they are carriers that the subjects become mentally affected.

Spinners' Cancer

In his annual report the health officer for Manchester, Dr. R. V. Clark, reports that valuable information on the causation of malignant disease by the lubricating oils used in cotton mills continues to be obtained from the work of the Manchester Committee on Cancer. The previous tests on the cancer-producing power of various lubricating oils and the concentration of the cancer-producing substance in oils is being successfully investigated. Search for the cancer-producing substance is proceeding and the active principle of a pure artificially made tar has been so concentrated that 5 per cent of this substance is more powerful than shale oil, the most dangerous of all the commercial oils. Only two pure compounds of known chemical constitution have been found capable of producing tumors. Attempts are being made to determine the factors which change a noncarcinogenic to a carcinogenic substance. Bitumen has been examined but no carcinogenicity was demonstrated in it. Pitch, however, has proved to be very active as a cancer-producing agent. An investigation of the highest practical importance has been carried out in the laboratory with a view to destroying the cancer-producing power of certain oils and so making them safe for industrial use. One method has resulted in the production of a purified oil which, when subjected to tests, failed altogether to produce cancerous growths. Moreover, its value as a lubricating agent is unimpaired. The committee therefore can hold out the hope that it will soon be possible to produce an oil which has the practical value required for industry and yet is quite safe for workers.

The Instruction of Physicians in Radium Therapy

A postgraduate course on the medical use of radium was held at St. Bartholomew's Hospital and was attended by seventy physicians. This is the first course of the kind held in this country, and when it was proposed it was thought that only about a score would attend. It is considered that the experiment has more than justified itself. The subjects were the physical properties of radium and radon, the appliances used in treatment, the biologic aspects of radium and its various medical uses. The amount of radium at St. Bartholomew's Hospital is 1.5 Gm. The committee organized to supervise its use includes chemists, pathologists, gynecologists and laryngologists, as well as physicians and surgeons. It is now definitely a cancer investigation committee which works on the cancer patients, who are carefully graded. There is also a high voltage roentgen therapeutic department in charge of a full-time medical officer.

Mr. H. S. Souttar, surgeon to the London Hospital, who has paid especial attention to radium therapy and recently produced a book on the subject, in a letter to the *Times* protests against what appears to be a general idea—that it is the duty of the teaching hospital to train the physicians of the country in the use of radium. This would lead to the conclusion that our supplies of radium must be broadcast and largely wasted in uninstructed effort. Mr. Souttar holds that it is absurd to attempt to produce experts in the most difficult branch of medical practice by a few days of intensive instruction. The insertion of a radium needle is simplicity itself but between its effective use for the cure of cancer and its futile or even dangerous application lies a whole world of difficult experience. Even those with the widest experience will refuse to state their conclusions in dogmatic form or attempt to supply formulas for general use. Centers fortunate enough to possess a supply of radium should give courses of instruction in radium therapy but with an entirely different object. Such a course has been arranged at the London Hospital. The object is to instruct physicians in the possibilities of radium, to keep them in touch with advances, and to make them realize what an amazing weapon has been added to our armory by the demonstration of actual cases. Some of them may wish to study the subject more fully, and opportunities will be furnished for all of them to become experts. But the primary object is to show physicians, and through them the public, what can be done.

The Radium Problem

The radium treatment of malignant disease is considered of such national importance that in March the Radium Subcommittee of Civil Research issued a report that led to the creation of the national radium fund, which now amounts to $1,500,000, of which $500,000 was contributed by the government. Subsequently two bodies were created to deal with the problem—the national radium trust and the radium commission, as described in previous letters to THE JOURNAL. The result is that a largely increased supply of radium will be available for the cancer campaign. The commission has therefore made a preliminary survey of the present position of radium in the treatment of malignant disease. It strongly deprecates extravagant claims, such as were made recently at a medical society, where it was declared that on a five years' average radium cures were obtained in 60 per cent of operable cases of cancer, in 37 per cent of borderline cases and in 28 per cent of inoperable cases. Most of the work done in this country has been in the treatment of cancer of the uterus, rectum, breast, tongue and mouth. In these regions as a result of long and hard work, and of many trials and many errors, a big step forward has been made. Encouraging as are the results, it must not be assumed that radium can cure all cases of cancer. Many problems remain to be solved. The attack on the primary growth is the easiest part of the task, for if the growth is accessible and radiosensitive, if the radium is implanted in the right place, if the whole tumor is irradiated, if the dosage is correct, and if the exposure is rightly timed, shrinkage and disappearance may be expected. But this does not generally affect secondary growths, if present. Therefore the treatment of cancer, whether by surgery or by radium, must be undertaken early, and an essential part of the campaign is education of the public to cooperate in early diagnosis. The relative value of radium and of excision the commission considers a difficult point, as sufficient data are not yet available. Most of the data concern the regions mentioned and there are not yet sufficient cases nor has sufficient time elapsed for the preparation of statistics to show the complete picture. A great point in favor of radium is that it does not involve the risks and suffering of mutilating operations.

So far the successes in this country have been mostly by means of superficial applications, by buried needles, radon seeds or a combination of these. Little has been done in irradiation from a distance by radium, more commonly known as the "bomb" treatment, for want of the large supply needed. The commission does not regard it as yet established whether malignant disease should be treated with radium alone or with radium combined with surgery and x-rays, but a judicious use of all three may be required. What is now required is intensive work on the many problems which are presented, with careful documentation of the methods used and registration of the results. This calls for close cooperation of physicists, clinicians, radiologists and pathologists. Some brilliant work has been done, but much more requires to be accomplished before the efficacy of radium can be finally established. Meanwhile good use can be made of the large quantity of radium now available as the result of the national radium fund. An even more pressing need is for more radium workers, trained in the highest standard of technic, and one of the first efforts of the commission will be devoted to augmenting the skilled personnel. It is emphasized that in unskilled hands, that is, persons not trained to the best technic, radium may be highly dangerous to both patient and operator.

The Increasing Cost of Social Services

In a previous letter to THE JOURNAL the immense and increasing costs of what are called "social services" but are simply a form of socialism were pointed out and it was argued that this burden on industry was the main cause of the unprecedented unemployment of the country. An official return, just issued, shows that the cost of social services in Great Britain for the year ending last March was $1,800,000,000. For England and Wales the expenditure increased from $1,350,000,000 in 1921 to $1,600,000,00 in 1928. In 1891 the expenditure was $100,000,000, in 1901, $155,000,000 and in 1911, $275,000,000 (not including maternity and child welfare work). The number of persons directly benefiting from an expenditure of $190,000,000 last year on unemployment insurance was 10,444,000 and from an expenditure of $165,000,000 under the national health insurance acts, 15,680,000. It is estimated that during the current year expenditure under the widows, orphans and old age contributory pensions act will be $105,000,000 as compared with $55,000,000 last year. Old age pensions last year cost $145,000,000 as compared with $90,000,000 in 1911 and poor relief $200,000,000, compared with $155,000,000. A bill extending and increasing the benefits of unemployment has been introduced by the government and will cost the country an additional $62,500,000 a year.

The Cause of the Increase of Insanity

Giving evidence before the coal gas poisoning committee, appointed by the government, Sir Maurice Craig, a psychiatrist, said that the reason for the increase in suicides was that there were only limited means in this country for the early treatment of mental disorder, sleeplessness being the most common factor which led to suicide. Fear of insanity drove people to suicide. The country must awaken to the fact that cure was possible in the early stages of insanity and that the number of suicides could thus be reduced. It has been pointed out in a previous letter that death from the inhalation of illuminating gas has in recent years become the most popular form of suicide in this country.

PARIS

(From Our Regular Correspondent)

Nov. 6, 1929.

The Twentieth French Congress of Medicine

The French Congress of Medicine is always held in some large city in the provinces, while the Congress of Surgery always convenes in Paris. This year, the Congress of Medicine was held in Montpellier, where the first faculty of medicine was established (not only the first in France but the first in Europe). It was attended by more than a thousand French and foreign physicians, under the chairmanship of Professor Vedel. The speakers—no less than fifteen in number—supplied considerable material. There were three topics on the program.

THE ETIOLOGY, THE PATHOLOGY AND THE PHYSICOPATHOLOGY OF SCARLET FEVER

The first topic was "the etiology, the pathology and the physicopathology of scarlet fever," and was presented in three introductory papers. In his paper, Professor Cantacuzène maintained that there is no scarlatinal streptococcus that is differentiable from other streptococci, and that the existence of a special virus must be assumed, of which the streptococcus is the transmitting agent. In another paper MM. Teissier and F. Coste renounce this hypothesis and support in part the toxallergen theory of Dochez. In a third paper, MM. Sacquépée and Liégeois adopt the theory of the special virus combined with the streptococcus. The discussion that developed following the presentation of the papers was somewhat confused. In general, the virus theory had the most supporters. Many communications were presented on serotherapy and vaccination against scarlet fever.

TREATMENT OF ANEMIC SYNDROMES

The second topic on the program was "the treatment of anemic syndromes," considered in three papers. In the first, Hedon and Jeanbrau studied the effects of blood transfusion and discussed the various hypotheses advanced with regard to its mode of action. In a second paper, M. Lambin of Louvain dealt chiefly with the Whipple method and with organotherapy. Carles of Bordeaux studied, in a third paper, the medicinal, physical therapeutic, climatic and hydrologic methods of treating anemias. Dr. Feuillie gave complete details on the method of preparing the extract of calf's liver, as proposed by William B. Castle and Morris A. Bowie.

ARTERIAL HYPOTENSION

On the third topic, "arterial hypotension," three papers were presented. Lion and André Blondel (of Paris) discussed arterial hypotension of idiopathic type. Their conclusion is that that condition is associated with hypo-excitability of the vascular sympathicus, whereas hypertension represents the opposite phenomenon. In a second paper, A. Dumas of Lyons considered acute and subacute hypotension. In a third paper, Cumas of Lyons and Giraud of Montpellier treated hypotension in chronic diseases and the clinical states of chronic hypotension. During the congress, the official unveiling of a monument to Professor Grasset, a famed professor of the University of Montpellier, took place.

Congress of Urology

The twenty-ninth French Congress of Urology has just been held in Paris under the chairmanship of Dr. Aversenq of Toulouse. Dr. Minet presented a paper on nontuberculous vesiculitis and its treatment. He approved (with many reservations, however) the Belfield method of injections as applied to the bladder, stating that they are less in vogue in Europe than in America. He raised still more objections to injections by way of the ejaculatory canal. Vaccination gives, according to his experience, very uncertain results. On the whole, massage, diathermy and warm lavages seemed to him the most reliable measures and the least dangerous. The general discussion was followed by the presentation of many private communications. The general secretary of the Association d'urologie announced the creation of two prizes. One—established by the association—will be awarded every five years to a French physician for the general value of his published works. The other comprises the sum of 200,000 francs bequeathed to Dr. Chevassu by a grateful patient, the income from which will be used every year to support the scientific researches in urology of a French physician or a French student.

Congress of Otorhinolaryngology

Two topics were on the program of the Congress of Otorhinolaryngology, which met recently in Paris under the chairmanship of Dr. Sargnon of Lyons. "The crenotherapeutic and the climatotherapeutic indications in otorhinolaryngology" was the subject of a paper by Flurin and Vialle, who spoke in favor of the growing therapeutic importance of mineral springs. "Rhinogenic frontal cephalalgias and their surgical treatment" was the topic presented by Dutheillet de Lamothe and Sourdille. Their conclusions were in favor of the endonasal route whenever feasible—mainly for cosmetic reasons. The exonasal route is, however, applicable in all cases and gives admittedly more certain results. Many further communications engaged the attention of the conventionists. One of the especially interesting papers was that of Julius Lampert of New York on mastoidectomy by the endo-aural route, which obviates scars and diminishes the frequency of postoperative complications. The results in 553 cases were reviewed. Georges Canuyt of Strasbourg contended that partial laryngectomy is the preferable treatment in cancer of the larynx.

Among those attending the congress from France and from foreign countries were: Drs. Lasagna of Parma and Citelli of

Catania; Sir Dundas Grant of London; Professor Costiniu of Bucharest; Julius Lampert of New York; J. N. Roy of Montreal; Blondiau, Hicguet and Fallas of Brussels; Helsmortel and Nyssen of Antwerp, and Villardosa of Barcelona.

The next congress will be held in October, 1930. Dr. Caboche was chosen president. The topics on the program of the next congress are "the tonsils as a focus of general infection," to be presented by Worms of Paris; "the indications and the technic of tonsillectomy," to be considered by Jacques of Nancy and Milinié of Marseilles, and "epitheliomas of the larynx; the present modes of treatment," with an introductory paper by Jacod of Lyons.

French Congress of Orthopedics

The Société française d'orthopédie held its eleventh annual session in Paris, immediately after the Congress of Surgery and under the chairmanship of Dr. Albert Mouchet. Among the foreigners present may be mentioned Albee and Sorri of New York; Meyerding of Rochester, Minn.; Guildal of Copenhagen; Putti of Bologna; Galeazzi of Milan; Ugo Camera of Turin; Nicod of Lausanne; Machard and Martin du Pan of Geneva; Spitzy of Vienna, and Maffei, Lorrhior, Marique and Moreau of Belgium. There were two topics on the program. "Juxta-articular tuberculous osteitis" was the subject of a comprehensive paper by Andrieu of Berck. As he views it, osteitis is often the primary phenomenon, although it is detectable only by means of comparative radiography of the two members, and the invasion of the articular serosa, although more evident, merely succeeds it. Operative treatment usually gives better results than immobilization alone, except for the hip. In treating the second topic, "recurring luxations of the shoulder," Tavernier of Lyons supported the thesis of Grégoire and Bazy, which postulates as the cause a congenital malformation of the head of the humerus. He discussed the different modes of treatment and expressed his preference for the creation of a bony extension (the Oudard method), which prolongs the coracoid process by means of a bone graft and leaves the articulation intact, giving thus excellent practical results.

The next congress will meet Friday, Oct. 10, 1930, under the chairmanship of Dr. Albert Mouchet. The main topics on the program are "coxa vara in adolescents," to be presented by Huc of Paris, and "obstetric paralysis of the upper limb," with an introductory paper by André Rendu of Lyons.

Plenary Assembly of the Anatomic Society

The plenary assembly of the Société anatomique, which was held at Paris in October, brought together a group of eminent technicians, many of whom were from foreign countries. The meeting was presided over by Roussy, professor of pathologic anatomy at the Faculté de médecine de Paris. There were three main topics on the program. Professor Rossle of Basel, who has just been called to the University of Berlin, presented a comprehensive study on "cirrhosis of the liver," in which he suggested a classification of the various types. Renouncing an etiologic classification as impossible, since the same lesions may be produced by very different causes, he took morphology as his basis and classified all cirrhoses according to the various processes of scar formation. He groups them as follows: 1. Atrophic cirrhosis (Laënnec's cirrhosis; a type of histolytic cirrhosis; chronic hepatosis with chronic interstitial hepatitis. 2. Hypertrophic cirrhosis: (*a*) hypertrophic type of Laënnec's cirrhosis (dominant hepatitis); (*b*) angiohematotoxic cirrhosis (genuine chronic hepatitis); type of desmolytic cirrhosis (mesenchymotoxic); cirrhosis with splenomegalia: nonpigmented (reticulotoxic); hemochromatic (bronze diabetes). 3. Mixed types and varieties of the preceding types; further, fatty cirrhosis, atrophic pigmentary cirrhosis, chronic yellow atrophy. 4. Biliary cirrhosis. 5. Rare types: for example, cardiac cirrhosis, Wilson's disease, parasitic cirrhosis, cirrhosis of Gaucher's disease and of Niemann-Pick's disease. A second paper, on "the development and the classification of cirrhoses of the liver," was offered by Noël Fiessinger and Guy Albot of Paris, who introduced into the consideration of the question the observations furnished by experimentation and treated the problem from a purely lesional point of view. They distinguished thus: (1) the precedence and the accompaniment of the parenchymatous modification; (2) sclerosis; (3) reticulosis; (4) cellular reactional hyperplasia. The blood vessels and the biliary ducts are never at the basis of the sclerosis. One can easily observe in the different regions the various aspects of the fibrous tissue. The phases of the cirrhosis are the insular phase and the interinsular phase. The formation of new biliary canaliculi is certain, and is demonstrated by the effects of ligation of the ductus choledochus in the rabbit. In a third paper Professor Hovelacque studied "the sympathicus of the upper limb," of which there are many irregularities. He distinguished two groups of rami communicantes, an upper group (C5, C6) for the upper roots of the brachial plexus, and an inferior group (C7, C8, D1) for the inferior roots of the plexus. The surgeon must look for the fibers (during the course of a ramisection) at the site of the ganglions, in order to cut the roots of the vertebral nerve at the base of the stellate ganglion and sometimes of the intermediary ganglion.

ITALY

(From Our Regular Correspondent)

Oct. 30, 1929.

Foreign Students in the Italian Universities

During the academic year 1928-1929, many foreign students attended the Italian universities. They came mainly from the countries of eastern Europe and appear to have sought out chiefly the universities of Padua, Pisa, Rome and Bari. Eighty of these students were given Italian scholarships. In addition, seventy-four Italian scholarships were assigned to Albanian students.

A Prize Offering for the Best Manual of the Hygiene of Youth

The Società d'igiene di Milano has offered a prize of 5,000 lire ($262), to be competed for by Italian physicians, for the best manual of the hygiene of youth, the ages 8 to 15 being considered more especially. The manual must treat all the subjects pertaining to the development of the young child: alimentation, clothing, instruction, physical and mental training, and sports. The dangers of tobacco and alcohol, the problems of sex, vocational guidance and training of the will are some of the special topics that must be considered.

The Seaside Hospital of Venice

Along the seashore, the so-called Lido, of Venice, there was erected a short time ago a group of buildings that have come to be known as the Ospedale al mare, or seaside hospital. The buildings comprise a seaside hospice, a training center for rachitic patients, pavilions for the various forms of treatment, places of recreation, infirmaries, and terraces for heliotherapy. Altogether, the institution has 2,000 beds available, a large number of which are reserved for clinical patients receiving prolonged treatment, including climatotherapy. During the past year, the institute recorded a total of 304,000 days of treatment, admitting children from eighty different villages and towns. The hospital is now occupying itself with the school problem and with the needs of the admitted children with respect to physical education.

International Congress of Demography

The second International Congress of Demography will be held in Rome in 1931, the first session having convened in Paris in 1928. Three committees have been appointed for the study of particular problems. The first committee, of which E. M. East is the chairman, will study the problem of popula-

tion in relation to the food supply of a nation. The second committee, presided over by F. A. Crew, will consider the problems of fecundity, sterility and differential fertility. The third committee is headed by Prof. Corrado Gini, directer of the Italian Bureau of Statistics, and will take up the demography of the primitive races.

New Research Centers

At Terme di Acqui, Piedmont, a session of the Comitato di consulenza scientifica e clinica was recently held under the chairmanship of Professor Donati, clinical surgeon of the University of Turin, who outlined the work developed by Professor Micheli and himself with a view to making Terme di Acqui a center of clinical research. Biochemical research laboratories for the study of waters and different types of muds, the mechanism of the action of muds, and the clinical behavior of patients during the action of muds have already been created. The speaker gave also a list of the various morbid conditions in which fangotherapy may be beneficial. Professor Viola, medical clinician of Parma, spoke of the advantages that thermal springs offer for the study of diseases of the joints. Professor Clivio described the beneficent action of muds in gynecologic disorders. Professor Pende spoke of the possibility of treating internal diseases by means of fangotherapy, while Professor Ferrata took up the question of the treatment of cutaneous disorders with the waters of thermal springs. After a brief discussion, it was decided to establish in Terme di Aqui a center of research on fangotherapy, in association with a clinic for the study and complete medical aid of the patients concerned.

At Castellamare di Stabia, through the initiative of the Società di idrologia, climatologia e terapia fisica, a meteorologic observatory has been created for the international hydrologic station. Professor Devoto of the University of Milan recalled the creation in Castellamare of the Centro di studi superiori, of an international scope, which was proposed by him on the occasion of the congress of climatology.

The International Conference on Nosologic Nomenclature

At the international conference held recently in Paris for the purpose of improving the nosologic nomenclature adopted for statistics on the causes of death, the Italian delegation consisted of Prof. Corrado Gini, Dr. Alberto Lutrario and Dr. (Colonel) De Bernardinis of the ministry of war. Professor Gini was appointed chairman of a subcommittee charged with studying the questions pertaining to the classification of deceased persons according to age, the adoption of an international standard death certificate, the need of giving physicians and students of medicine special instruction in filling out death certificates, and in regard to the criteria to follow in the case of multiple deaths. The conference approved all the proposals made by this subcommittee.

Dr. Lutrario was spokesman for the subcommittee charged with the study of the classification of deaths due to accidental lesions resulting from modern means of transportation and occupational accidents.

In addition to a nosologic nomenclature on the causes of infant mortality and three special nomenclatures on the causes of death, the conference approved, at the suggestion of the Italian delegation, the signing of a protocol looking toward the adoption of an international agreement between the various countries making the use of these nomenclatures compulsory.

The Death of Professor Ruffini

The University of Bologna has lost by death Prof. Angelo Ruffini, occupant of the chair of histology and general physiology. Born at Arquata, in 1864, Ruffini became a privatdozent in histology in 1894. He was head of the dissection department in the University of Siena, and later, instructor in embryology at Siena, following which he removed to Bologna in 1912. His many publications include especially works on histology and general embryology. He discovered a new type of pacinian corpuscles and was the first to describe certain special nerve endings of the subcutaneous tissues. In the field of embryology, in studying the mechanism of development, he discovered cellular functions hitherto unknown. After some thirty years of study and research, he recently published a work on physiogenics, in which he has collected and developed his theories based on the formula "The form is the plastic image of function." Passionately fond of research and instruction, he founded the scientific laboratories of the Ospedale maggiore and the Clinica medica in Bologna, and the laboratories of histology at the universities of Siena and Bologna. He was a member of the Academy of Lynxes and of many national and foreign scientific societies.

Hygienic Defense

On the initiative of Prof. Achille Sclavo, hygienist of the University of Siena, a group of twenty-five students of medicine and surgery has been formed in Siena and has assumed the task of spreading, during the vacation periods, correct ideas of hygiene among the people. These student volunteers will get in touch with the authorities, the elementary teachers and the priests, and will distribute leaflets, pamphlets and books in promotion of modern hygiene. The instructions that they will impart will concern more especially the raising and training of children, the fight against flies, the crusade against malaria, and the physical education of children. They will also make examinations of asthmatic children and thus collect data of interest to the clinic. Student Gragnoni has been chosen to watch over the development of the program, keeping in touch with the various campaigns and with Professor Sclavo.

The War in Relation to Scholarly Aptitude in Students

Dr. Raffaele D'Addario has published in the *Notiziario demografico* the results of his study on the selective effects of the recent war, from the intellectual point of view, on a group of students of the Instituto superiore di Bari. He divided the students into three groups: (1) those who died in the service; (2) those who served but survived, and (3) those who did not perform military service. For each group he calculated the averages obtained in university examinations. Comparing the data thus secured with those established for the academic year 1913-1914 by Professors Boldrini and Croara, relative, respectively, to the universities of Padua and of Cagliari, Dr. D'Addario reached the conclusion that the war did not exert unfavorable selective effects with respect to the scholarly aptitude of the students examined.

New Academicians

Professors Dante De Blasi and Antonio Dionisi were recently chosen "academicians of Italy" in the science class. Professor De Blasi, occupant of the chair of hygiene in the University of Naples, is the author of more than seventy publications on subjects pertaining to the etiology of certain infective diseases, serology and epidemiology. To him we owe the demonstration that the morbigenic agent of rabies is filtrable, and that the Wassermann test is positive in a great number of malarial patients who are not syphilitic.

Professor Dionisi occupies the chair of anatomy and pathologic histology at the University of Naples. His principal researches have been on the comparative pathology of the hemolymphatic and respiratory systems; the correlation between the endocrine glands, and the significance of the reticuloendothelial system under various experimental and morbid conditions. As an enthusiastic student of malariology, Dionisi discovered the malaria of bats and showed that the disease has no relation to human malaria. He established also the biologic significance of the semilunar phase of the estivo-autumnal malarial parasite, and he has studied the nature of the various types of malarial anemia.

The Anticancer Center in Bologna

On the initiative of Professor Viola, senator, medical clinician of the University of Bologna, an anticancer center has been established in Bologna, with departments of general surgery, gynecology, radium and roentgenotherapy.

A Seminar in Criminology

At the University of Turin, a special course in criminology is to be given during the academic year 1929-1930. It will be a seminar course, and will be designed for physicians, lawyers, and civil and military magistrates. The chief subject matter of instruction will be criminology (Professor Carrara), legal medicine in relation to the application of the police power (Professor Canuto), physiology and the psychic processes (Professor Herlitzka), and forensic psychiatry in relation to crime (Professor Lugaro).

Campaign for the Promotion of Italian Medical Books

Under the chairmanship of Professor Devoto of the University of Milan, the special committee for the promotion of Italian medical books held a meeting recently. It was decided: (1) to request the support of the Società degli autori in an endeavor to bring about better cooperation between authors and publishers; (2) to work out a standard contract between author and publisher; (3) to promote an exhibit of Italian medical works (at industrial fairs, on book exhibit days, and the like); (4) to study the valorization of Italian medical works by the most opportune means. In order to carry out this program, a committee was appointed with Professor Gabbi, senator and medical clinician in Parma, as chairman.

RIO DE JANEIRO

(From Our Regular Correspondent)

Nov. 15, 1929.

Fermentation and the Phenomenon of "Caméléonage" with Dysentery Bacilli

Dr. Lucas de Assumpçao, assistant in the Instituto de Hygiene of São Paulo, presented before the fourth Pan-American Conference of Hygiene, Microbiology and Pathology at Rio de Janeiro a summary of his studies on the dysentery bacilli and fermentation. It dealt with the behavior of the Shiga, Y, Flexner and Strong dysentery bacilli, and with the typhoid and paratyphoid A and B bacilli, as observed in semisolid mediums with various sugars. Experiments were made with lactose, dextrose, mannite, maltose, saccharose and xylose and differences in fermentation caused by the saprophytic existence of these organisms were noted. Late fermentation was observed with the Shiga bacillus in 84.6 per cent of cases, with the Y bacillus in 88.2 per cent, and with the Flexner bacillus in 17.6 per cent. The author had four strains of dysentery bacilli of the Strong type with which late fermentation was observed, principally with saccharose; then with maltose and much less frequently with mannite and lactose. The "caméléonage" mentioned in the literature in reference to dysentery bacilli has been observed principally with lactose, mannite and maltose. In the experiments reported, saccharose and maltose (rarely) were the sugars used.

The "caméléonage" observed by the author is an interesting phenomenon which depends on a great number of Shiga, Y and rarely Flexner bacilli in fermentation from three to nine days, in mediums containing saccharose or maltose. Fermentation continued when the cultures were kept in the incubator, as observed over a period of thirty days; but if after fermentation had occurred the cultures were kept at room temperature, the medium returned to its primitive color (an indication of alkalinity). If replaced in the incubator, the medium became acid; then again alkaline on removal from the incubator. It continued to change in this manner with alternate changes in temperature, although this phenomenon was more delayed in appearance each time. The phenomenon of "caméléonage" was observed in saccharose in 76.9 per cent of cases with Shiga bacilli; in 14.1 per cent with Y bacilli; in 5.8 per cent with Flexner bacilli, and in none with typhoid and paratyphoid bacilli. It was observed in maltose in 23 per cent of cases with Shiga bacilli, and in none with typhoid and paratyphoid bacilli. Thus "caméléonage" was observed frequently with the Shiga and Y types of dysentery bacilli, rarely with the Flexner type and not at all with typhoid and paratyphoid bacilli. Late fermentation was noted in the same way. As these investigations were carried on, careful attention was paid to such important factors as composition of the medium, the indicator, the quality and amount of sugar used, the time of sterilization, the solid and liquid mediums and inoculation of the medium. New experiments are planned to find out whether there are any differences in the immunologic reactions of dysentery bacilli with regard to whether or not they produce late fermentation after repeated inoculation on sugar mediums. In accordance with the facts observed, there are dysentery bacilli which in the first part of their saprophytic life pass through a phase of adaptation, characterized by the inconsistency of the fermentation produced. Some strains, after a few months, produce fermentation regularly, others continue to show late fermentation, and still others show no change in fermentation from that present after twenty-four hours of incubation on their first inoculation into a sugar medium.

New Species of Sporotrichales

Dr. Pereira Filho of the Faculty of Medicine of Porto Alegre states that he has isolated a new species of *Sporotrichales* from encrusted vegetating lesions near two miliary abscesses on the nose of a 12 year old girl. The disease was of two months' duration but had not affected the patient's general condition. Pus, rich in polymorphonuclear leukocytes and poor in lymphocytes, was evacuated from one of the abscesses. Neither bacterial nor mycelial organisms were found in stained smears of the pus by the methods of Gram-Nicolle and Claudius. Eighteen cultures of the pus were made on Sabouraud's dextrose agar. Nine were kept in the incubator at 37 C., and nine were kept at room temperature. After fourteen hours, by using Gougerot's technic, Dr. Filho observed small white stellate colonies, formed by numerous elongated spores, arranged on thin, regular, mycelial threads. The incubator cultures grew very fast; the others grew much slower. The colonies were yellowish-white and full of furrows and crests when luxuriant. They did not become dark or show the chocolate color which has been found in some other *Sporotrichales,* although some light brownish staining could be seen in the old cultures. The patient's serum in a dilution of 1:320 agglutinated the spores of the fungus. The Bordet-Wassermann test was negative. The Verner resorcin-serum-flocculation test was positive. Evidently, Dr. Filho was not dealing in this case with *Sporotrichum beurmanni,* the most common of all *Sporotrichales.* This conclusion was reached because the optimum temperature for the development of the fungus was 37 C., and because the colonies did not show the chocolate brown color described by de Beurmann and Jeanselme. The fungus was also different from Schenk's *Sporotrichum,* which produces undulating mycelial threads forming coremia. The absence of moniliform filaments and black coloration distinguished it from Gougerot's *Sporotrichum.* It was also distinct from Splendore's *Sporotrichum asteroides* which has fusiform spores arranged in a stellate manner at the end of each mycelial thread that are easily recognized under the microscope. It was evident that Dr. Filho was dealing with a new species, which he called *Sporotrichum fonsecai,* dedicating it to the Brazilian mycologist Dr. Olympio da Fonseca. A species, *Sporotrichum epidermides,* which was described in Germany some time ago, was taken into consideration by Dr. Filho in arriving at his conclusions.

Alterations of Sensibility in Amyotrophic Lateral Sclerosis

Prof. A. Austregesilo believes that amyotrophic lateral sclerosis is a trophic motor disease in which disturbances of sensibility may appear. Alterations of the objective sensibility, which have been considered formerly as being rare in this condition, are always present, and should be looked for carefully, because mild changes may be overlooked unless it is realized that they are always associated with the disease. Observations made in Brazil have proved more frequently than in foreign countries that small variations in the objective sensibility occur in Charcot's disease. Charcot's disease has been discovered more frequently in Brazil during the last year than in previous years because Brazilian scientists have been more interested in neurologic studies than before.

Treatment of Diarrhea by Tincture of Iodine

Dr. Fabio Carneiro de Mendoça, from his studies on the treatment of diarrhea by the use of tincture of iodine, has reached the following conclusions: 1. Tincture of iodine may be tried in every case of acute diarrhea or of chronic colitis, without fear of causing harm to the patient. The dosage which the author used in the thirteen cases mentioned in his work was 5 drops twice a day in adults, and 2 drops twice a day in children. 2. According to Adler and Paals, tincture of iodine should be tried in cases of apparent bacillary dysentery, while the report of the bacteriologic studies is pending. By doing this, the untimely use of antidysenteric serum, which may cause immediate or late untoward effects, is avoided. 3. When tincture of iodine is beneficial, the effect is similar to that of iodo-oxybenzene pyridine sulphonate. 4. Tincture of iodine may be dangerous to the patient if it is used in connection with other antidysenteric or antidiarrheic medication.

BUDAPEST

(From Our Regular Correspondent)

Nov. 13, 1929.

The Number of Drink Shops in Various Countries

In his pamphlet entitled "The Alcohol Question," Secretary Gortvay states that in Hungary in 1927 there were 28,249 drink shops—a ratio of 1 to every 322.22 inhabitants. Above 15 years of age the ratio was 1 to every 105.30. The number of drink shops in Budapest was 3,944—one to every 235.45 inhabitants (one to 73.2 counting only males above 15 years of age). In Germany in 1927 there were approximately 240,000 drink shops, employing 716,000 persons. Most of them were beer shops. In Berlin alone there were about 16,000 shops where alcoholic drinks were sold. Their ratio to the population was 1:256. In 1905 the ratio was 1:128. In France in 1926 there were 460,274 liquor shops—a ratio of 1 to every ninety inhabitants.

The Cause of Precocious Sexual Maturity

Dr. Béla Steiner, clinical assistant at the Budapest University, recently discussed precocious sexual maturity. In this region of Europe the normal period of puberty in boys is from 15 to 17 years of age, and in girls, from 13 to 16. In some individuals sexual maturity occurs earlier. In some families it is a regular phenomenon that girls menstruate in their tenth year. Repetition of this may be regarded as physiologic. When there is no obvious cause of early sexual maturity pathologic conditions must be considered. Disorder is evident when puberty occurs in young children.

The cause of precocious sexual maturity may be central or peripheral. It is produced by central causes in chronic hydrocephalus and in tumor of the pineal gland. The latter occurs almost exclusively in boys with manifestations of general cerebral pressure (headache, fainting and papilledema). Diabetes insipidus and obesity, encountered in some cases, implicate the hypophysis. Rigidity of the pupils to light points to the anterior corpora quadrigemina. In hypofunction of the hypophysis sexual maturity is retarded. If symptoms do not point to cerebral tumor, attention should be directed to the glands of internal secretion. In the presence of testicular and ovarian tumors puberty may occur abnormally early. The recognition of these conditions is not difficult. In ovarian tumor the tumor cells increase the secretion of the ovaries and after extirpation of the tumor the symptoms of precocious sexual maturity regress. In tumors of the suprarenal glands phenomena may be observed which point to precocious sexual maturity. In girls growth is enhanced and axillary and pubic hair increases in amount. Heterosexual signs are frequent. Menstruation usually does not occur.

Negative Phase in Protective Immunization Against Typhus

Some continental authors believe that the "negative phase" which may follow inoculation against typhus may increase the susceptibility to the infection. The idea of a negative phase occurring after inoculation was originated by Wright, who observed that in a case of furunculosis subsequent to inoculation with staphylococcus vaccine the phagocytic capacity of the blood first decreased and then speedily rose. Likewise the patient's resistance rose and fell with the phagocytic capacity of the blood. Wright called this reduced stage of resistance of the organism the "apophylactic state." Under favorable experimental conditions a negative phase of short duration can be shown after almost all vaccine inoculations; practical experience, however, has proved that this is of no detrimental consequence to the immunized subject. Protective inoculation during the latent stage of abdominal typhus provokes a negative phase, according to Hirsch and Caemmert, and increases the number of serious cases. Some clinicians do not attribute any such importance to protective inoculation; others state that during the incubation stage it favorably influences the severity of the disease. Thus, to be cautious, those who are considered to be in the incubation stage are given only a half dose at the first inoculation. Then when the second inoculation is due if the disease has not developed, immunization is continued with the regular dose. Less caution is necessary if the individual in question has been exposed to infection but shows no evidence of the disease.

Dr. Schmidt-Ott, Honorary Doctor of the Budapest University

The Hungarian University of Sciences, named after its founder Pázmány Péter University, recently received the president of the Notgemeinschaft der Deutschen Wissenschaft at a public meeting to present to him an honorary medical diploma. Dr. F. Schmidt-Ott, late minister of public instruction, established the Notgemeinschaft eight years ago. This association receives financial support from the state and from the leading economic circles of Germany. In turn the Notgemeinschaft gives considerable support to German science, as shown by the fact that in the last two years it has donated more than 1,500,000 marks to public libraries and the same amount for promoting the publication of scientific works. It gave 4,000,000 marks for the purchase of scientific instruments, and apparatus (distributing the money among different institutions), and it spent 500,000 marks for exploratory excursions and 600,000 marks for stipends to eminent scholars. Dr. Schmidt-Ott extended the activity of his association to other countries, chiefly to Hungary. He gave financial aid to the university library and presented a great number of books and periodicals to the university and to other libraries. He arranged for Hungarian young men studying in German universities to enjoy the hospitality of the Kaiser Wilhelm Institut and to have access to its library and to its modern technical equipment. The board of the university showed its gratitude when the rank of honorary doctor of medicine was conferred on Dr. Schmidt-Ott. The rector of the university emphasized that it is an ancient right of the

university which has been exercised only 132 times in the last eighty years. The distinction has been accorded to nineteen Germans in the last thirty-three years. Degrees have been conferred on Kraus, Franz Liszt, W. Wundt, Mommsen, Max Müller, Bunsen, Mackensen, Virchow, Waldeyer, Schjerning and Karl Theodor, the Bavarian prince.

The Aschheim-Zondek Pregnancy Test

The recognition of pregnancy in its early stage is made possible by the Aschheim-Zondek reaction. The reaction is based on the fact that in pregnant women an abnormal amount of anterior pituitary hormone is excreted in the urine. The presence of the hormone can be demonstrated by inoculating sexually immature female mice with the urine. After 100 hours significant changes can be demonstrated in their ovaries. Dr. E. Kelemen has reported the results of 234 Aschheim-Zondek reactions before the Budapest Royal Medical Society. One hundred and forty-nine of the reactions were positive. These results were verified by the clinical observations in 143 cases (six patients did not appear at the control examinations). Negative reports in eighty-five cases were verified by the clinical observations in seventy-seven (eight patients did not appear for examination). Dr. S. Fekete said that he obtained results similar to those of Dr. Kelemen. The only disadvantage of the method is that it takes 100 hours; a quicker method is needed in cases of extra-uterine pregnancy and in cases of complications of tumor and pregnancy.

BERLIN

(From Our Regular Correspondent)

Nov. 9, 1929.

The Treatment of Pulmonary Tuberculosis, and Tuberculosis of Other Organs, with a Salt-Free Diet

From the tuberculosis sanatoriums of the provincial insurance institute of Mecklenburg in Waren, Dr. Apitz relates a series of observations in the *Deutsche medizinische Wochenschrift* (number 46). The observations concern fifty-three children. The period covered by the treatment was 348 days. Among the fifty-three children, there were five cases of surgical tuberculosis, one of which was tuberculosis of the skin. The remaining cases were pulmonary tuberculosis in the second or third stage—mostly of the productive type; in many cases with smaller and larger cavities. The patients received the customary institutional treatment along with the dietary treatment. Surgical treatment, also, was employed when it was feasible and was needed.

The result with the children affected with surgical tuberculosis was as follows: After a period of treatment that ranged from ninety-three to 345 days, all patients showed improvement, while the case of tuberculosis of the skin and a fistulous case of tuberculosis of the zygomatic arch were cured. It must be admitted that the dietary treatment had a decisive influence on the course of the tuberculosis of the skin. In other cases the improvement was not more prompt or more marked (function of the joints) than in cases of surgical tuberculosis in which rest, surgical measures, roentgenotherapy and the like were employed. The observation that tuberculosis of the skin under dietary treatment healed rapidly is in agreement with the experiences gained in other institutions.

As to the remaining forty-eight children who were suffering from pulmonary tuberculosis, there were twenty-nine cases of the "open" type. Of these twenty-nine childen, nineteen died. Four were still in the institution. The remaining six were dismissed in an improved condition.

The remaining nineteen with lung disease, which was not regarded as infective, were much improved on dismissal—the process in some being arrested. The success obtained can by no means be ascribed, in the main, to the salt-free diet. Such results were attained long ago with the old and tried methods, without the intervention of the dietary treatment, the same as in other institutions.

A special interest attaches also to the children who died in the institution from tuberculosis. They could not be said to be in a hopeless condition. But since they, with their open tuberculosis, and in view of the very poor housing conditions, were a grave menace to the healthy members of the family, they were transferred to the institution, where they were to remain until they could be sent home without danger to their entourage or until death intervened. In this manner, long periods of treatment resulted. And as the treatment with the salt-free diet was begun at once after admission to the institution, a favorable outcome could naturally be expected. In all the children there was at the start a sharp upward trend of the weight curve. The course of the tuberculosis was just as changeful and differed in no respect from that in the other children who did not receive the salt-free diet. The roentgen controls confirmed the physical observations. The final results were the same as in previous years. Over against those who were improved, there was the same number of unimproved and fatal cases.

In not a single case did it prove possible with the salt-free diet to bring about sufficient improvement to justify collapse treatment, even though the indications for unilateral or bilateral application of the method were extended to the fullest possible limits.

Apitz closes his article with the following statement: "We—and doubtless many other institutions—have given up the method of dietary treatment of pulmonary tuberculosis. In spite of punctilious application of the method, it not only proved a complete failure but is associated with certain dangers. It happens not infrequently that patients (also in ambulant practice) express a desire to be treated with the salt-free diet and refuse other forms of treatment as superfluous or out of date. It may not always be possible to convince these patients promptly of the unfounded nature of their hopes, so that often valuable time will be lost. Instances of this have been recently especially common, owing to the influence of the unfortunate propaganda in favor of the salt-free treatment that has appeared in the daily press. It is unfathomable how such articles ever came to be published, and likewise amazing that even a special clinic for the application of the method was established, whereas, for pulmonary tuberculosis at least, the procedure appears absolutely worthless."

Excess of Births over Deaths in Wurttemberg

The number of marriages in the state of Wurttemberg during the fourth quarter of 1928, as compared with the corresponding quarter of 1927, shows a considerable increase (1927, 6,026; 1928, 6,282). Likewise the number of living births increased from 10,271 to 11,045. On the other hand, the number of deaths dropped from 7,563 to 7,076. Infant mortality, too, shows a slight decline. In the first year of life there were only 783 deaths as against 816 during the corresponding quarter of the previous year. The increase in the number of living births and the decrease in the number of deaths produced an excess of births over deaths that exceeded by 1,261 that of the fourth quarter in 1927. The excess was 3,969, as against 2,708. If one compares the vital statistics for the calendar year 1928 with those for 1927, an increase is noted in the number of marriages, the number of living births and in the excess of births over deaths, whereas the deaths show a decline. The number of marriages increased from 19,972 up to 22,458 (12.4 per cent); the number of living births from 45,562 up to 47,667 (2.4 per cent), and the excess of births over deaths from 15,317 up to 17,174 (12.1 per cent). The number of deaths, on the other hand, declined from 31,245 down to 30,493 (2.4 per cent). Applied to the total population of the state, there were, per thousand inhabitants, in 1928: 8.7 marriages, 18.5 living births, 11.8 deaths, 6.6 excess of births over deaths; in 1927, 7.7

marriages, 18.0 living births, 12.0 deaths, 5.9 excess of births over deaths. From these statistics, it is evident that marriages, births, deaths and excess of births over deaths present more favorable aspects throughout than in 1927, the marriage rate showing the most improvement. Likewise, the infant mortality rate for 1928 (7.0 per cent of the living births) is more favorable than in 1927 (7.7 per cent).

Increase in Suicide in Berlin

In 1928, the total number of suicides in Berlin was 1,473, which was a marked improvement over the record for 1927 (1,679), but the record for the first half of 1929 shows a regrettable recrudescence. In the period from January 1 to June 30, no fewer than 809 persons voluntarily ended their lives by shooting, hanging, drowning, poisoning or the use of gas. The proportion of men was very much greater than that of women (521 men, 288 women). It is strange that the largest number of suicides for any month occurred in May, when it would seem that reawakening nature ought to inspire new courage in the souls of men, the total for that month being 172, or nearly six a day. The motives for the despondent deed were, in part, grave economic need or financial troubles, and, in part, incurable bodily disorders or mental troubles—grief, sorrow and melancholia.

AUSTRALIA

(From Our Regular Correspondent)

Nov. 1, 1929.

Racial Hygiene Conference

The necessity for medical examination before marriage was urged by Dr. Arthur, the minister for health in New South Wales, at the Australian Racial Hygiene Conference held in Sydney, September 6.

The other delegates considered that the idea had much in its favor, but stated that it was necessary to remember that in marriage, human beings, and not machines, were concerned. There was a grave danger of the cure being worse than the disease, for immorality might very materially increase if legal marriage were forbidden.

In such circumstances it would be far wiser to educate the population on the advantages of healthy unions, and on the far-reaching effect and evils attributable to an unclean life, both before and after marriage.

Motions were passed that the prime minister be urged to take up the question of uniform marriage and divorce laws, that he be asked to take control of the manufacture and sale of liquor on the Canadian system, and that insanity and venereal disease be made grounds for divorce.

Venereal disease problems were dealt with by Dr. Cooper Booth, director of the division of venereal diseases under the New South Wales board of health.

"The uplift of humanity is in other hands than mine," said Dr. Cooper Booth, who spoke entirely from the medical point of view. At the same time, he declared, he was just as much in favor of clean speech, thought and living as any member of the congress. He advocated an extensive educational campaign, and modern facilities for treatment. Dr. Booth commented on the apathy of the man in the street, except when his personal liberty was infringed, or when his concepts of conduct were outraged. He referred also to the value of propaganda work by members of the conference, and said he believed that direct lectures would produce better results than propaganda. Whatever was done must be continuous and not spasmodic. The high percentage of notifications of disease between the ages of 16 and 20 drew attention to the vital necessity for sex instruction by parents. Some parents shirked the responsibility, yet were not infrequently the most harsh of judges if things went wrong with their children. The department was anxious to establish a clinic in Sydney for continuous treatment equal to anything in the world. The special clinic for women at the Rachel Forster Hospital was undoubtedly the finest in the commonwealth. There would be little necessity to apply the provisions of the Venereal Disease Act of 1918 if continuous treatment were available for men in Sydney. It was an urgent necessity. Mrs. James Booth of Melbourne, who presided, said that the conference was in complete agreement with Dr. Cooper Booth. A continuous and steady campaign, as suggested by him, had never been given a complete trial. Mrs. Booth believed that it would be a success.

Mr. C. O'Reilly, commonwealth film censor, said that if the church and all well intentioned members of the community spoke frankly of sex matters there would probably be no need for a censor. The moving picture producer naturally exploited the sex interest to its utmost. In the past sex had been surrounded by the unholy and the forbidden. On the contrary, it involved the most uplifting and ennobling of human emotions. It was not the blot on the escutcheon of humanity that some people imagined. Self reverence and right living, together with adequate sex education, were essential for the youth of today.

Dr. George Brooks spoke on the ravages of disease, and Dr. Lorna Hodgkinson on mentally deficient children.

In an address at the evening session Dr. Ralph Noble insisted on the need for passing such a mental defectives bill as had for years past been promised by successive ministers for health.

(To be continued)

The Health of New Zealand

A slightly higher death rate and a falling birth rate are recorded in the annual report for 1928 of the director general of health, Dr. T. H. A. Valintine, presented to the New Zealand parliament, August 29. The death rate was 8.49 per thousand of the mean population, being an increase of 1.7 per cent over the rate for the preceding year. The infant mortality was 36.18 per thousand births, against 38.74 in 1927. This phenomenally low level has never hitherto been attained in New Zealand or any other country in the world.

The excellent position of the total infant mortality rate has been attained chiefly among those deaths occurring after the first month of life. The rate for infants under 1 month shows a slight decrease for 1928 over the previous year, but the nearer to the moment of birth the less the improvement. The birth rate was 19.56 per thousand, the number of births, 27,000, being much the lowest for the past nine years.

The tuberculosis death rate was 5.02 per 10,000 of the mean population, and this remarkably low rate places the dominion in a better position than other countries.

The cancer death rate of 9.87 per 10,000 of living persons represents an increase over the preceding year. Cancer is principally confined to persons of 40 years of age and upward, and during 1928, of all persons over the age of 40 years whose deaths were registered, one in every seven of males and one in every six of females died from cancer.

Of the notifiable infectious diseases the most common was scarlet fever, which has been epidemic for the last two years. Fortunately, in comparison with the extensive epidemic of 1903, the disease appears of a milder type. However, the case mortality of 0.89 per cent in 1928 showed an increase over the rate for 1927, which was 0.73.

Influenza (all forms) showed an increase and a higher death rate (1.74 per 10,000) and diphtheria a slight increase, while a light year was experienced in regard to whooping cough and measles. Typhoid is still rare. An outbreak of dysentery in the Auckland district, particularly among the native race, caused much concern.

Dealing with maternal welfare the report states: Deaths from accidents and diseases of the puerperal state remained at practically the same level in 1928 as in 1927, the numbers being 137 in 1927 and 134 in 1928. Owing to the lower number of births in the latter year, however, the rate per thousand births increased slightly from 4.91 to 4.93.

Marriages

ROBERT MASSIE PAGE, Washington, D. C., to Miss Pauline Johnson of Schuyler, Va., at Williamsburg, Va., October 5.

SAMUEL LEONARD COOKE, Washington, D. C., to Miss Helen Louise Anderson of Sandy Level, Va., October 17.

ELISHA ALBRIGHT METZGER to Miss Elizabeth Wilkey Spence, both of Covington, Ind., November 18.

CHARLES YEATMAN GRIFFITH, Hague, Va., to Miss Louisa Carr Tayloe of Washington, Va., October 24.

RUSSELL R. RUDD, Fulton, Ky., to Miss Frances Rice of Hickman, at Paducah, October 12.

JOHN COTTEN TAYLOE, Washington, N. C., to Miss Nellie Holt of Smithfield, September 9.

WILLIAM BLOUNT TURNER to Miss Mildred Shamp, both of Wooster, Ohio, November 26.

HOUSTON ROBINSON FARLEY to Miss Mary Keister, both of Pulaski, Va., October 13.

PHILIP H. DORNE to Miss Ruth Helen Kramer, both of Chicago, November 17.

CAESAR PORTES to Miss Rose Rubenstein, both of Chicago, November 28.

Deaths

Harry **Taylor Marshall** ⊕ University, Va.; Johns Hopkins University School of Medicine, Baltimore, 1898; Walter Reed professor of pathology, University of Virginia Department of Medicine since 1908; professor of pathology, Philippine Medical School, 1906-1908; director of the Virginia Tuberculosis Association, 1916-1918, and the National Tuberculosis Association, 1919-1921; member of the Society of American Bacteriologists; member and past president of the American Association of Pathologists and Bacteriologists; aged 54; died, November 8, at the American Hospital, Paris, France, of pneumonia, following an operation.

Victor J. Gangewere, Allentown, Pa.; Medico-Chirurgical College of Philadelphia, 1907; member of the Medical Society of the State of Pennsylvania; past president of the Lehigh County Medical Society; aged 49; on the staffs of the Sacred Heart Hospital and the Allentown Hospital, where he died, November 14, of cerebral hemorrhage.

Jacob Gray Dorsey ⊕ Wichita, Kan.; College of Physicians and Surgeons, Keokuk, Iowa, 1883; member of the American Academy of Ophthalmology and Oto-Laryngology and the American College of Surgeons; formerly on the staff of St. Francis Hospital; aged 69; died, November 15, of pneumonia.

Theresa Bannan, Syracuse, N. Y.; Woman's Medical College of the New York Infirmary for Women and Children, 1890; member of the Medical Society of the State of New York; aged 61; died, October 22, at the Victoria General Hospital, Halifax, N. S., of intra-abdominal malignancy.

Harold Lester Burr, Middletown, Conn.; New York Homeopathic Medical College and Flower Hospital, New York, 1915; member of the Connecticut State Medical Society; served during the World War; aged 41; died, October 16, at the Middlesex Hospital, following an operation.

Roland J. Hall, Lubbock, Texas; Medical Department of the Tulane University of Louisiana, New Orleans, 1894; member of the State Medical Association of Texas; on the staff of the West Texas Hospital; aged 68; died suddenly, October 25, of angina pectoris while hunting.

Samuel Webb Clason, Brooklyn; Medical Department of the University of the City of New York, 1867; Civil War veteran; for twenty-one years member of the board of health of New York City; aged 87; died, November 15, of chronic myocarditis and arteriosclerosis.

Edwin Ephraim Straw, North Bend, Ore.; Vanderbilt University School of Medicine, Nashville, 1898; past president of the Oregon State Medical Society; formerly mayor of Marshfield; served during the World War; aged 52; died suddenly, October 14, of heart disease.

George Haven Clarke ⊕ Concord, N. H.; Tufts College Medical School, Boston, 1902; member of the New England Society of Psychiatry; past president of the Merrimack County Medical Society; aged 70; died, October 21, of chronic myocarditis and nephritis.

William Joseph Byrnes ⊕ Minneapolis; University of Michigan Medical School, Ann Arbor, 1882; member of the American College of Surgeons; formerly coroner; on the staff of St. Mary's Hospital; aged 70; died suddenly, November 4, of heart disease.

Fred Pope Clark ⊕ Stockton, Calif.; Cooper Medical College, San Francisco, 1887; member of the American Psychiatric Association; superintendent and medical director of the Stockton State Hospital; aged 64; died, November 17, of heart disease.

Augustus A. McDonald, Jackson Springs, N. C.; North Carolina Medical College, Charlotte, 1905; member of the Medical Society of the State of North Carolina; aged 52; died, September 17, at the Central Carolina Hospital, Sanford, of uremia.

Raymond Lock Sommers, Philadelphia; Jefferson Medical College of Philadelphia, 1917; member of the Medical Society of the State of Pennsylvania; served during the World War; aged 38; died, September 28, of chronic nephritis and uremia.

Henry Haynes Koons ⊕ Los Angeles; University of Pennsylvania School of Medicine, Philadelphia, 1897; served during the Spanish-American and World wars; aged 62; died, October 23, at the California Lutheran Hospital, of duodenal ulcer.

Morgan Daniel Hughes, Bloomfield, N. J.; Niagara University Medical Department, Buffalo, 1898; member of the Medical Society of New Jersey; on the staff of St. Mary's Hospital, Orange; aged 63; died, October 23, of heart disease.

Benedict Stewart Ralston, Pittsburgh; Western Pennsylvania Medical College, Pittsburgh, 1889; member of the Medical Society of the State of Pennsylvania; aged 62; died, October 24, at Frankfort Springs, Pa., of cerebral hemorrhage.

Henry Alan Naylor ⊕ Pikesville, Md.; University of Maryland School of Medicine, Baltimore, 1900; past president of the Baltimore County Medical Society; aged 51; died, November 15, of angina pectoris.

Carl O. Folkens, Cleveland; Medical Department of Western Reserve University, Cleveland, 1886; aged 71; died, February 3, at the Cleveland Clinic Hospital, of pneumonia, heart disease and arteriosclerosis.

Edward Ellis Evans ⊕ McKeesport, Pa.; New York Homeopathic Medical College and Hospital, 1896; aged 57; died, October 27, of diabetes mellitus, arteriosclerosis and coronary occlusion.

Mary J. S. Whetstone, Minneapolis; University of Michigan Medical School, Ann Arbor, 1881; member of the Minnesota State Medical Association; aged 80; died, October 24, of pneumonia.

John Abbott Cantrell, Grenloch, N. J.; Jefferson Medical College of Philadelphia, 1885; aged 66; died, October 4, at the Camden County General Hospital, of acute dilatation of the heart.

Abram A. Lydecker, Haledon, N. J.; Medical Department of the University of the City of New York, 1890; health officer of Haledon; aged 68; died, October 12, of chronic myocarditis.

William Frank Ferguson ⊕ Premier, W. Va.; Medical College of Virginia, Richmond, 1900; member of the Medical Society of Virginia; aged 55; died, October 4, at Salem.

Benno Hyams ⊕ New York; Columbia University College of Physicians and Surgeons, New York, 1899; aged 53; died, October 22, of prostatic abscess and chronic myocarditis.

Melville C. Keith Little, Winnetka, Ill.; College of Medicine and Surgery (Physio-Medical), Chicago, 1905; aged 46; died, November 3, of chronic nephritis and myocarditis.

Allen Howard Chamberlain, Dover-Foxcroft, Maine; Harvard University Medical School, Boston, 1888; aged 68; died, August 31, of cerebral hemorrhage.

James Burns Muir, Roseau, Minn.; Bennett College of Eclectic Medicine and Surgery, Chicago, 1885; aged 69; died in October of chronic myocarditis.

Shirley Houston Betts ⊕ Shreveport, La.; University of Texas School of Medicine, Galveston, 1911; aged 43; died, October 22, of coronary thrombosis.

Darius Day Drennan, Coeur d'Alene, Idaho; Rush Medical College, Chicago, 1890; county health officer; aged 70; died, October 1, of cerebral hemorrhage.

Charles Arthur, San Francisco; Homeopathic Medical College of Pennsylvania, Philadelphia, 1866; aged 83; died, September 27, of chronic myocarditis.

William Adam Miller, Kansas City, Kan.; Jefferson Medical College of Philadelphia, 1888; aged 77; died, October 14, of myocarditis.

Edwin David McLean, Truro, N. S., Canada; Bellevue Medical College, New York, 1887; aged 65; died, November 10.

Bureau of Investigation

MORE MISBRANDED NOSTRUMS

Abstracts of Notices of Judgment Issued by the Food, Drug and Insecticide Administration of the United States Department of Agriculture

Flu-Zone.—The R. B. Pettijohn Company, Portland, Oregon, shipped in December, 1928, from Oregon to Washington a quantity of Flu-Zone, which the federal authorities declared was misbranded. When analyzed, the preparation was found to consist essentially of ammonium chloride, ammonium carbonate, menthol, chloroform and traces of plant drug extractives, with alcohol, sugar and water. The curative claims made for this preparation to the effect that it was a remedy for influenza were declared false and fraudulent and in April, 1929, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment 16351; Issued November, 1929.*]

Optolactin Tablets.—Fairchild Bros. and Foster of New York City shipped in October, 1928, from New York to Illinois a quantity of Optolactin Tablets that were declared misbranded. The tablets were described as a preparation of the Bacillus Bulgaricus Type A and of the Bacillus Acidophilus. Analysis of the tablets by the federal chemists showed that they contained an insufficient number of organisms to be efficacious in the treatment of disease. The article was declared adulterated in that its strength fell below the professed standard under which it was sold, and misbranded in that false and fraudulent therapeutic claims were made for it. In March, 1929, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment 16352; Issued November, 1929.*]

Adamson's Botanic Cough Balsam.—The F. W. Kinsman Company of Elmira, N. Y., shipped in December, 1928, from New York to Connecticut a quantity of Adamson's Botanic Cough Balsam that was declared misbranded. When analyzed, the federal chemists found that it consisted essentially of a syrup containing red pepper, tartar emetic, guaiac and other resinous material, a trace of alkaloids, water and a small amount of alcohol (1.4 per cent). The curative claims that the product was a remedy for whooping cough, bronchitis, etc., were declared false and fraudulent. In April, 1929, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment 16353; Issued November, 1929.*]

Inflammacine.—The Math-Ol Inflammacine Company of Rochester, N. Y., shipped from that place to Massachusetts a quantity of Turner's Inflammacine, which was declared misbranded. The preparation was an ointment having a petrolatum base and containing the usual menthol, camphor, oil of wintergreen and volatile oils, including spearmint and eucalyptus. The claims to the effect that the product was a remedy for influenza, bronchitis, coughs, etc., were declared false and fraudulent and in March, 1929, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment 16355; Issued November, 1929.*]

Haywood's Cold and Grippe Tablets.—W. R. Warner and Company, Inc., St. Louis, Mo., shipped in December, 1928, to New York a quantity of Haywood's Cold and Grippe Tablets, which were declared misbranded. When analyzed, the tablets were found to contain the alkaloids of cinchona, gelsemium and aconite, together with camphor, red pepper and aloes. The claims on the trade package, to the effect that the product was a cure for influenza, were declared false and fraudulent and in March, 1929, the Warner concern, having admitted the allegations, judgment of condemnation and forfeiture was entered and the court ordered that the product be released to the manufacturer on payment of costs and the execution of a bond, conditioned in part that the preparation be relabeled under the supervision of the government.—[*Notice of Judgment 16362; Issued November, 1929.*]

Lungremed.—W. D. Stokes of Baton Rouge, La., in January, 1929, shipped from Louisiana to Texas a quantity of Lungremed, which the federal authorities declared was misbranded. When analyzed, it was found to consist essentially of ammonium and potassium salts, carbonates, iodides and creosote flavored with oil of peppermint. The product was sold as a remedy for tuberculosis, asthma, bronchitis, hay fever, influenza and various other conditions. The claims made for the preparation were declared false and fraudulent and in April, 1929, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment 16356; Issued November, 1929.*]

Iophene.—The Mayer Bros. Drug Company of St. Louis, Mo., shipped in December, 1928, and January, 1929, from St. Louis to New Orleans a quantity of Iophene, which the federal authorities declared was misbranded. When analyzed, it was found to consist essentially of small amounts of carbolic acid, iodides and menthol in water. It was declared misbranded as to composition, in that the claims implied that it contained free iodine, which it did not. It was further declared misbranded because of false and fraudulent therapeutic claims to the effect that it was a powerful prophylactic against influenza, etc. In April, 1929, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment 16357; Issued November, 1929.*]

Warren's Wonder Workers.—The S. Pfeiffer Manufacturing Company of St. Louis, Mo., shipped in February, 1929, from St. Louis to Seattle a quantity of Warren's Wonder Workers, which were held to be misbranded. The preparations consisted of capsules. Each contained acetanilide, quinine, sodium and potassium salts, bromides and aloes. It was declared misbranded, first, because the package claimed that it contained no quinine, which was false; it was also declared misbranded because it was falsely and fraudulently claimed to be an effective remedy for influenza, coughs, neuralgia, etc. In April, 1929, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment 16358; Issued November, 1929.*]

Owen's Oil.—The Carolina Chemical Company, Union, S. C., shipped from that state to North Carolina in February, 1929, a quantity of Owen's Oil, which was declared misbranded. When analyzed, it was found to consist essentially of lard, oil and some other fatty substance containing a small amount of menthol. The claims made on the trade package implied that it was a meritorious remedy for infantile paralysis, influenza, pleurisy, croup, arthritis, neuralgia, toothache and various other conditions. These claims were declared false and fraudulent and in May, 1929, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment 16359; Issued November, 1929.*]

Fluco.—The Fluco Laboratories, Inc., Greenville, S. C., shipped to Raleigh, N. C., in January, 1929, a quantity of Fluco, which was declared misbranded. The preparation—a liquid containing glycerin and alcohol together with acetanilid, ammonium carbonate, camphor and benzoic acid—bore curative claims to the effect that it was a remedy for influenza which were declared false and fraudulent. In May, 1929, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment 16360; Issued November, 1929.*]

Buddies.—The Buddies Company, Ravenswood, W. Va., shipped in January, 1929, to Ohio a quantity of Buddies, which was declared misbranded. Each tablet was found to consist essentially of aspirin (5½ grains), caffeine (⅓ grain), red pepper and salicylic acid. The preparation was labeled as "Better than Aspirin in the sense that they are not depressing on the heart," a statement which was declared false and misleading. The curative claims on the trade package, to the effect that it was a remedy for influenza, sciatica, rheumatism, toothache, lumbago, etc., were declared false and fraudulent, and in April, 1929, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment 16372; Issued November, 1929.*]

Correspondence

EFFECTS OF TOBACCO SMOKING

To the Editor:—As a sort of postscript to my article on tobacco smoking (THE JOURNAL, August 31), Dr. M. J. Chiasson of Lyons, Ill., has given me permission to quote from a personal letter. Such a wealth of first hand information about the effect of smoking on women is worth passing on.

As you do not seem to have a great deal of information concerning the effect of tobacco smoking on women during pregnancy and lactation, I thought that you might be interested in getting a few facts that have come under my observation. These facts have to do with the past and present history of my people who migrated from the coast of Normandy in the early part of the seventeenth century to what is now known as Nova Scotia. For a century or more they withstood persecution at the hands of the English and led a very primitive life. After the expulsion of the French from Canada in 1755, seven families settled on the west shore of Cape Breton Island, and there they have lived in more or less peace ever since. My paternal grandmother had seventeen children and my maternal grandmother twelve. All children were well and healthy physically and mentally. Practically all the women of that generation smoked and had large families.

My mother has been smoking since she was a girl. She will be 80 years old next winter. She had fifteen children, thirteen boys and two girls; nursed every one of her children and reared twelve, all of whom are living and well. The fact that both my father and my mother were heavy smokers did not impair the physical and mental faculties of any of the children. . . .

All my mother's sisters smoked. They were five. Each had a large family, ranging from eight to fourteen. They all nursed their children. In fact, it was a rare thing to see a woman of French origin that did not smoke, and as for an artificial nursing bottle, it was an unknown quantity.

These women were not the type of women pipe smokers that one meets among the poor class of Americans. They were bright, alert, hard-working, thrifty, commanded the respect of their children and taught them to be self-reliant, honest and charitable toward their fellow men.

WINGATE M. JOHNSON, M.D.,
Winston-Salem, N. C.

NEEDLE FOR IRRIGATION OF THE ANTRUM

To the Editor:—I have used a variety of instruments especially designed for irrigation of the antrum and found the Lichtwitz needle very satisfactory. For the last two years however, I have used almost exclusively a spinal tap needle for this purpose, because it can be obtained considerably finer and with a well fitting stylet to preserve its firmness. The Lichtwitz needle is of 15 gage, the spinal tap needle of 18 or of even smaller caliber. This needle has decided advantages over the Lichtwitz needle. Paramount is the patient's comfort. The sense of breaking bone is entirely eliminated, thereby doing away with excess trauma or shock and minimizing the loss of blood, which often contaminates the antrum washings when instruments of greater caliber are used. This is especially a boon to the neurotic patient.

MAX KIMBRIG, M.D., Brooklyn.

"THE PREVENTION OF MYOPIA"

To the Editor:—Referring to the Current Comment on this subject (THE JOURNAL, November 23), when a myopic child reads print at 8 cm. it does not follow that "it was using 12 diopters of accommodation, having only 2 diopters in reserve." The amount of accommodation used depends mainly on the degree of myopia. Thus, with 12 diopters of myopia, the little one would read at 8 cm. without any effort of accommodation at all, using the far point of vision for reading. As a matter of fact, that is what all persons with "high" myopia do; hence, their ability to read so much with so little effort, and their immunity from eyestrain. The dangerous "physiologic" factor is not accommodation but extreme convergence plus ocular congestion from bad head posture. This, on a basis of hereditary tissue inferiority (of choroid, sclera, retina?), produces elongation of the globe by pressure-traction, with atrophy, degeneration and other conditions. Fully correct the myopia, allowing good reading vision at a distance which will not tax convergence —say from 14 to 20 inches—and the progress of the myopia will be checked, or at least slowed down, in most cases. A certain percentage, the malignant type, will go on in spite of anything and everything that is done, for reasons largely unknown. One thing, however, is known, and that is that there is no sense in "paralyzing the accommodation with atropine," as there is no accommodation to relax. Furthermore, complete paralysis of accommodation would not be of the slightest use in preventing a myopic child from reading its head off or, rather, its eyes out, as the child reads with its far point, not with its near point. No, all near work should be forbidden and the little patients sent to a farm or summer camp.

P. H. FRIDENBERG, M.D., New York.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

EFFECTS OF SULPHARSPHENAMINE

To the Editor:—Will you kindly inform me whether the intramuscular injection of sulpharsphenamine, 0.6 Gm., could produce symptoms two days after the injection simulating acute purpura hemorrhagica with bleeding from the gums, vomiting of blood, hematuria, numerous petechiae all over the body, sanguineous blisters on the mouth and buccal membranes, and ecchymotic spots. During almost thirty years of practice I have never had such an experience. Do you know of such a complication? Please omit name.

M.D., New York.

ANSWER.—Sulpharsphenamine is a sulphurous acid ester of arsphenamine which contains from 22 to 24 per cent of arsenic. Voegtlin, Johnson and Dyer (Sulpharsphenamine: Its Manufacture and Chemotherapeutic Properties, *Pub. Health Rep.* **37**:2783 [Nov. 10] 1922) have apparently shown that the drug is more stable than neoarsphenamine, is equal in therapeutic efficiency but of lower toxicity, and is eliminated as rapidly by intramuscular as by intravenous injection. The usual dosage is from 0.3 to 0.4 Gm. Most observers have noted an increased incidence of toxic cutaneous reactions as compared with the older arsenicals. Stokes and Behn (Serologic and Clinical Results in Various Types of Syphilis with Sulpharsphenamine Administered Intramuscularly, THE JOURNAL, July 26, 1924, p. 242) reported two cases of exfoliative dermatitis in 1,360 intramuscular injections given to 126 patients. A mild case of purpura followed an injection of 0.4 Gm. intravenously. Belding (Sulpharsphenamine in the Treatment of Syphilis, *Arch. Dermat. & Syph.* **9**:470 [April] 1924) reported 16 per cent of cutaneous reactions. Combes (Purpura Hemorrhagica Following Sulpharsphenamine, *Arch. Dermat. & Syph.* **15**:194 [Feb.] 1927) described a fatal case of purpura hemorrhagica following sulpharsphenamine treatment, the first hemorrhage appearing two weeks after the last injection. Similar cases have been reported after neoarsphenamine treatment. In the present instance there has obviously been serious injury to the vascular system (aleukemia hemorrhagica), which appears to be one of the chief drawbacks to the use of sulpharsphenamine. Caution in dosage is advisable. There is no way of foretelling this complication, and it is usually ascribed to idiosyncrasy. The treatment of a case of this type is by early transfusion and the use of sodium thiosulphate intravenously.

EFFECTS ON BLOOD OF ACETANILID AND COAL TAR PRODUCTS

To the Editor:—Please be good enough to send to me any data that you might have bearing on toxic effects on the blood simulating pernicious anemia, noted after prolonged use of acetanilid and other coal tar products.

M.D., Miss.

ANSWER.—These agents produce a blood destruction anemia which during the stage of regeneration may present pictures somewhat suggestive of pernicious anemia. Thus, D. D. Stewart (Chronic Poisoning by Acetanilid; THE JOURNAL, June 3, 1905, p. 1725) says: "Apart from the usual chocolate hue of the blood so noticeable on puncture, the blood picture, were it not for an almost invariably present leukocytosis, would suggest pernicious anemia. There is a diminution in the [number of]

erythrocytes, with variation in their size and shape, the presence of erythroblasts often in larger number than is encountered in pernicious anemia, polychromatophilic cells, and of cells the protoplasm of which is undergoing granular degeneration." Victor Schilling (Das Blutbild, Jena, Gustav Fischer, 1929) considers hemoglobinemic inner bodies particularly characteristic of methemoglobinemic poisoning. Hyperchromatic microcytes are often particularly prominent.

CLIMATE FOR RHEUMATIC FEVER

To the Editor:—Is any region in the United States comparatively free from rheumatic fever? Three of my children have had it with endocarditis and, while I understand that the heart itself is a focus of reinfection, the disease appears to be much more common along the Atlantic Coast, where we live. I have heard that there is not enough rheumatic heart disease in the Middle West for clinical teaching purposes. On the other hand, I have heard that atypical rheumatism, with heart disease, is just as common there. Have you any information as to such a locality as San Antonio, Texas, in this connection? M.D., Philadelphia.

ANSWER.—While there is some confusion with regard to the effect of climate as a predisposing factor in rheumatic fever and the concomitant rheumatic endocarditis, it would seem quite certain that dampness is a factor. Spot maps in England show it to be definitely more frequent in the damper areas. In the United States it appears to be less frequent in the Southern states and, among the Southern states, much less frequent in those states with a dry climate. Southern Texas, New Mexico and Arizona, or warm dry regions in California, should be advantageous.

Physicians there apparently see much less rheumatic fever than is seen in the Northern part of the United States, and patients sent there from the North have shown less tendency to recurrence. The lower altitudes are much to be preferred if there is any cardiac disease.

POSSIBLE DANGER OF EXHAUST FUMES FROM CAR USING "ETHYL GAS"

To the Editor:—A husky young man believes he was poisoned by exhaust fumes from ethyl gas six months ago. He has complained ever since of headache, vertigo, abdominal pain and extreme nervousness, all symptoms greatly aggravated by riding in a closed car or a truck cab. I should like to know whether any such long-drawn-out, intermittent effects are plausibly due to that date with ethyl last March, or whether they are psychic or malingering, as there is an insurance claim pending if from ethyl. Local garage men seem to recognize a prolonged sensitization to any exhaust fumes caused by old exposure to ethyl exhaust. Is there any such possibility? Please omit name. M.D., Michigan.

ANSWER.—The symptoms described might conceivably follow a slight degree of poisoning by inhalation of undiluted tetraethyl lead. But there is no appreciable amount of tetra-ethyl lead in exhaust gas. The lead poisoning that can follow from exposure to the exhaust from cars burning ethyl gas can be only of the type of chronic lead poisoning. It would have such indications as the blue line above the teeth, and lead in the excreta. It is possible that a man inhaling exhaust gas from ordinary gasoline repeatedly in such amounts as occur in repair shops may suffer an impairment of health, and if he is of a naturally hypochondriacal disposition he will imagine that these symptoms are aggravated whenever he smells exhaust gas. But this impairment of health is not permanent. Recovery is complete as soon as the patient returns to healthful living conditions and is no longer breathing constantly during working hours such atmospheres as occur in badly ventilated garages and are unfortunately common in repair shops.

EFFECTS OF EXPOSURE TO X-RAYS IN DENTAL EXAMINATIONS

To the Editor:—Kindly advise me what effect exposure to x-rays from a dental x-ray machine may have on one's body, when one is taking from 200 to 400 one-second exposures daily, and using 100 volts, 10 milliamperes and about a 3-inch spark gap. No protection to the operator is used other than a lead glass surrounding the tube. My technician has been doing this for three years. Are these exposures sufficient to produce sterility? M.D., New York.

ANSWER.—There is no immediate danger of untoward effects on the health or well being of the technician under the working conditions as outlined in this question. A remote danger may be that of an individual personal susceptibility to the effects of radiation. It is claimed by some that a relatively small percentage of individuals are oversusceptible to the effects of x-rays. The formula as given is insufficient to produce sterility, assuming that the technician is several feet from the x-ray tube when the actual exposures are made. If she is apprehensive lest this occur, protective measures may be adopted in the form of a lead rubber apron to be worn to protect the pelvic organs. It is suggested that the technician carry about the person several dental films in the clothing or uniform and, after certain periods, develop them to determine the amount of x-rays that reach these test films. If any appreciable amount is revealed, a lead protection screen should be provided for her to stand behind during exposures. A blood test should be made periodically of the technician (every four to six months), and if any material alteration from the normal constituents is discovered it would indicate the advisability of a change of occupation.

MEDICAL TREATMENT OF CATARACT

To the Editor:—Will you kindly inform me whether any medical treatment is of value in incipient cataract? I would ask particularly about the merits of boric acid and glycerin, ethylmorphine hydrochloride, and the subconjunctival injections of mercuric cyanide. Please omit name.

G. B., Pennsylvania.

ANSWER.—About every five years, the ophthalmic world is thrilled by the announcement of a new medical cure for senile cataract. This has been going on for at least 200 years. Boric acid and glycerin, ethylmorphine hydrochloride, subconjunctival injections of mercuric cyanide, radium, antigenic injections of lens proteins, mixed endocrine glands, sodium iodide in all possible combinations, and so on have all had a trial. Not one of them has been scientifically established as of value and more cataracts are being operated on than ever before.

HYDRARTHROSIS

To the Editor:—A patient suffering from a marked cardiorenal disease, and with a much enlarged liver, ambulant, fairly comfortable, and seated in his home, suddenly began to feel pain in the knee. The knee began to swell. When I arrived, about two hours after the onset, the patient was writhing in pain, the knee was swollen, extremely tense, and distinctly warmer than the other knee. There was no fever. On the following day the pain was much less, and the knee, though still swollen, was not so hard and tense. During the succeeding week the knee gave little pain except when bearing weight, and the swelling is rapidly subsiding. There has been no increased temperature, no redness, and after the second day no acute tenderness. Kindly comment on the correct diagnosis for this type of hydrarthrosis, its etiology and pathology, and prognosis. Please omit name. M.D., California.

ANSWER.—It is impossible to give an accurate diagnosis of this type of hydrarthrosis, its etiology and pathology, but it is possible that a mild trauma was overlooked. It is also possible that this may be a synovitis of renal origin; that is, in the nature of an allergic manifestation from proteins or albumins. It may have been due to a hemorrhagic arthritis or synovitis. If this condition recurs, the knee should be aspirated under the most aseptic and antiseptic conditions and the fluid examined microscopically and bacteriologically. Then a compression bandage should be applied, followed by a splint. Rest and gentle physical therapeutic measures are indicated.

SWEETENING VEHICLE SAFE FOR PRESCRIPTION FOR PATIENT WITH DIABETES

To the Editor:—Can you furnish me with the name of a sugar-free vehicle to carry medication for a patient with diabetes?

RONALD B. ROGERS, Neenah, Wis.

ANSWER.—Obviously a sweet vehicle is desired. The "elixir of gluside" of the British Pharmaceutical Codex (1923), the formula for which is reproduced in the Pharmaceutical Recipe Book of the American Pharmaceutical Association (1929), is approximately a 5 per cent solution of soluble gluside-U. S. P. in 12.5 per cent alcohol solution. It is a sweetening without flavoring, the addition of 1 cc. of which to any medicament would more than suffice to sweeten a teaspoonful. An elixir somewhat similar in taste to the aromatic elixir may be obtained from the following formula:

Compound spirit of orange	0.50
Gluside	0.20
Alcohol	25.00
Water	to make 100.00

FORMICATION IN HODGKIN'S DISEASE

To the Editor:—Could you tell me of anything which might relieve the formication associated with a progressive Hodgkin's disease? Please omit name. M.D., New York.

ANSWER.—When the patients respond to general treatment, such as roentgen therapy, the cutaneous manifestations improve. The usual local antipruritics are of some benefit but not a great deal. One is hardly justified in using any analgesic or hypnotic, but relief is secured in certain cases with the use of acetylsalicylic acid internally.

TREATMENT OF CHRONIC INFECTION AROUND FINGER NAIL

To the Editor:—Please inform me of the proper treatment for an infection around the nail which has persisted for two years with periods of quiescence and then a recurrence. This infection is of the so-called run-around variety. Please omit name.

M.D., New Jersey.

ANSWER.—The base of the nail should be exposed by an incision on each side and the proximal half of the nail cut off. The distal part may be left. This permits free drainage of the infection which has penetrated beneath the base of the nail and has persisted because of inadequate drainage.

By the time the matrix has formed a new nail, the infection will have cleared up. Occasionally it is advisable to touch up exuberant granulations with a 10 per cent solution of silver nitrate.

GOLD SODIUM THIOSULPHATE FOR LUPUS ERYTHEMATOSUS

To the Editor:—For the last ten weeks I have had under treatment a patient with facial lupus erythematosus. Once a week she has been given gold sodium thiosulphate intravenously. After each of the first nine treatments, improvement was noticed but the last injection has been followed by new patches appearing close to the site of the old lesions. Do you believe it would be best to continue or to stop these treatments? Have you anything else to recommend? She has had radium, ultraviolet and x-rays, with no improvement. Please omit name.

M.D., Saskatchewan.

ANSWER.—If the dose was above 50 mg., it would seem wise to reduce it for following injections or better to stop for a while and give quinine. Ten injections is not a long course as the drug is being used; but the recurrence suggests an exacerbation of the disease, which is a contraindication to any but the minimal dosage of the drug. Perhaps it would be well to substitute sodium thiosulphate injections for a time until the effect of the ten injections is well overcome and the extent of the exacerbation can be judged.

EFFECTS OF LEMON JUICE AND VINEGAR ON HAIR

To the Editor:—What effect does lemon juice have on blond hair? Does it soften the hair, does it make it lighter, or is it just an advertising stunt for selling lemons? Does vinegar have any effect on blond hair in making it softer or lighter? Would the use of lemon juice or vinegar be detrimental to the health of the scalp? Please omit name.

M.D., Pittsburgh.

ANSWER.—Lemon juice and vinegar have an effect if used after a soap shampoo. They neutralize any alkali remaining, thus making the hair feel softer. They do not affect the color of the hair, nor do they exert any beneficial or detrimental effect on the scalp.

INFECTION OF TONGUE

To the Editor:—A tinsmith-plumber, aged 32, has had a sore tongue for two and one-half years. The tongue is usually swollen but is always clean and red around the edges. It is furred over the upper surface, and at its wor it is sore and tender. It is simply a large beefy-looking tongue, of uni[illegible]n resistance, not crusting or ulcerating at any time. He complains of a bad taste described as sharp, and being worst in the early morning. The patient is of an extremely healthy and well nourished type and has no stomach disturbance at any time, always having a good appetite. He had the turbinates removed ten years ago and since then an asthmatic bronchitis has gradually improved, until today he rarely gets bronchitis and hardly ever any interference with his breathing. The tongue condition began one year after the cessation of a two-year discharge from the seat of a tibial fracture. With the extrusion of a splinter, the discharge stopped and his leg now is apparently normal in all respects. I have regulated his diet to exclude acidosis as a factor. He smokes and drinks moderately, but having these habits reduced to a minimum for months failed to relieve his tongue condition. He has a postnasal catarrh with considerable dropping into the throat and more or less hawking and spitting. The latter condition, however, has cleared considerably under nasal douching. Antral transillumination is negative. The other sinuses have not been roentgenographed, but his freedom from "head colds" and the absence of symptoms pointing to involvement of these sinuses should fairly well rule them out. The upper teeth have no pyorrhea, but a dentist has suggested extracting them as they give a lot of trouble. The lower teeth are normal. Urinalysis has always given negative results and all other examinations have been negative. Do you think that anything in his trade might cause his sore tongue? I have never had such a resistant condition. Please omit name.

M.D., Ontario.

ANSWER.—No part of the work that is done by a tinsmith or a plumber may be regarded as a likely source of this condition of the tongue.

It is suggested that further inquiry as to the etiologic factors be conducted, with reference to infection from hyphomycetes. There are good reasons to believe that oral infection with fungi or related higher vegetable parasitic forms is far more common than is now recognized. In addition to thrush and torulae, there are other varieties less well identified. Cultures should be made from scrapings taken from the most highly inflamed areas, or direct examination may be made of smears that have been treated with sodium hydroxide, after the manner used in examining skin scrapings for ringworm.

Whether or not hyphomycetes or related parasitic forms are detected, it may be well to carry out a therapeutic test, by using a highly diluted copper sulphate solution as a mouth wash. This astringent makes a disagreeable mouth wash. It should be made by putting only 5 or 6 drops of a 10 per cent solution of copper sulphate in a glass of water.

PHLEBITIS WITH DERMATITIS

To the Editor:—A man, aged 56, a minister, came in about ten days ago with a most peculiar type of eczema of the left leg, extending from 2 inches below the knee down to the ankle. The eczema seemed to be superimposed on a dark pigmented skin, is scaly in some places and weeping in other places, and periodically is quite disturbing because of intense itching. I have made nearly every conceivable test that I know of, except spinal punctures, and the patient is in perfect health. He had an attack of appendicitis thirty years ago; the appendix was ruptured but healed up with little trouble. Four days after the operation, the patient noticed a severe pain in the calf of the leg. He called the physician's attention to it, but, since the pain subsided in a few hours, nothing more was thought about it. In a few days following this the calf of the leg began to swell, but since there was no pain the patient made no mention of it. The swelling persisted, and about sixteen years after this an eczematous area about the size of a dollar appeared, which went away in a few days of its own accord. About three years ago, another spot began and that has consistently spread until it involves nearly the entire leg. No amount of treatment has availed anything, and I am wondering whether any such case as this could be found, and could any suggestions be made that one might try out. There is no evidence of varicosities anywhere, although I have had in my mind the possibility of a thrombophlebitis of the deeper veins, following the operation. I hardly see how this could be, for long before this the circulation should have been taken care of by other veins.

LOUIS L. SHERMAN, M.D., Oakland, Calif.

ANSWER.—The original phlebitis has probably interfered with the circulation to a sufficient degree to keep up the dermatitis. There have been cases of dermatitis of this type accompanied by so much thickening that the skin resembled the bark of a tree. Treatment is unsatisfactory. Complete rest in bed with the leg elevated and the usual local applications employed in eczema is all that can be recommended.

TREATMENT OF CHRONIC SPONDYLITIS

To the Editor:—Please let me have your opinion on the treatment of chronic spondylitis. My patient is a man, aged 26. The ailment was first noticed about six years ago. The case was diagnosed as spondylitis by an orthopedic surgeon two years ago. At that time the tonsils, adenoids and devitalized teeth had been removed and the patient carefully examined for any other foci of infection. Electrotherapy and exercising were then advised, together with breathing exercises, and the patient was given a Taylor brace. Roentgen examination at that time showed a small amount of bone formation in the lower lumbar region. The patient, a dentist, gave up his practice five months ago, as his trouble seemed to be increasing. He believes that his work is the cause of the increased irritation. In the last five months he has noticed a marked improvement. Recently consulting another orthopedic surgeon for a check-up, he was advised to stop exercising, with the exception of exercises for chest development, to take cod liver oil, and to be in the sun as much as possible. Roentgen examination at that time showed little new bone formation; the condition appeared to be undergoing retrogressive change instead of progressive. As my patient has been advised to exercise and not to exercise, his back being apparently in the same condition at two examinations, I should like to know any acceptable treatment.

S. A. WEEKS, M.D., Inkster, N. D.

ANSWER.—The treatment of chronic spondylitis depends on the type of trouble, its duration, and various other factors. If this is a case of hypertrophic arthritis of the spine, the treatment consists in recumbency with or without the use of a Bradford or curved Whitman gas-pipe frame, and the application of traction to the head, and to the pelvis by means of a belt with straps attached to weights and pulleys that go over the foot of the bed. It is undoubtedly true that the patient's occupation is a factor in increasing his trouble.

Active exercise should be prescribed as soon as it can be carried out without much discomfort and should be preceded by baking, massage and diathermy. The chest exercises have been sponsored by Goldthwait and his school of associates. Heliotherapy is valuable. The question of cod liver oil has two sides—there are some who are benefited by it, and others in whom it favors the deposition or formation of exostoses. The question of gastro-intestinal elimination is important in many of these cases.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

COLORADO: Denver, Jan. 7, 1930. Sec., Dr. W. W. Williams, 224 State Capitol Bldg., Denver, Colo.

DISTRICT OF COLUMBIA: Washington, Jan. 13, 1930. Health Officer, Dr. W. C. Fowler, District Bldg., Washington, D. C.

NATIONAL BOARD: Feb. 12-14, 1930. In all centers where there are five or more candidates. Dir., Mr. E. S. Elwood, 225 South Fifteenth St., Philadelphia, Pa.

NORTH DAKOTA: Grand Forks, Jan. 7-10, 1930. Sec., Dr. G. M. Williamson, Grand Forks, N. D.

OREGON: Portland, Jan. 7-8, 1930. Sec., Dr. Joseph F. Wood, 510 Selling Bldg., Portland, Ore.

PENNSYLVANIA: Philadelphia, Jan. 7-11, 1930. Bedside examination last two days in various Philadelphia hospitals. Dir., Dr. D. C. Koch, Harrisburg, Pa.

SOUTH DAKOTA: Huron, Jan. 21-22, 1930. Dir., Dr. H. R. Kenaston, Bonesteel, S. D.

UTAH: Salt Lake City, Dec. 17-18, 1929. Director, Mr. S. W. Golding, 412 State Capitol Bldg., Salt Lake City, Utah.

WASHINGTON: Seattle, Jan. 9-10, 1930. Basic Science. Dir., Mr. Charles Maybury, Olympia, Wash.

WISCONSIN: Madison, Jan. 14-16, 1930. General Sec., Dr. Robert E. Flynn, 315 State Bank Bldg., La Crosse, Wis.

ANNUAL REGISTRATION IN COLORADO

During the past session of the Colorado state legislature House Bill 43 was passed requiring the annual registration of all licentiates of the state board of medical examiners. This bill became effective when approved by Governor Adams, March 27, 1929.

The following are licensed by the board: doctors of medicine, osteopaths, chiropractors, midwives and chiropodists.

Extracts of portions of some of the laws included in the medical practice act of Colorado state that every licentiate of the board of medical examiners shall, before March 1 of each calendar year, pay to the secretary-treasurer of the board an annual registration fee of $2 or, if he is not a resident of Colorado, $10, and obtain an annual registration certificate for the current calendar year, which he shall at all times conspicuously display in his office. The registration fee becomes due January 1 of each year and is delinquent on the succeeding March 1.

Failure to pay this fee within the time specified shall automatically suspend the right of any licentiate to practice his or her profession while delinquent. If any licentiate fails for three consecutive years to pay this fee it shall be the duty of the state board of medical examiners without hearing or notice to cancel his or her license, subject to reinstatement. If application for reinstatement is made, the board shall reconsider the moral character and professional qualifications of the applicant on notice and hearing before ordering reinstatement, and unless such showing shall thereupon be made to the board as would entitle the applicant to the issuance of an original license, reinstatement shall be denied. The applicant for reinstatement shall file a written application and pay the same fees required for the issuance of an original license. Any person practicing his or her profession while his or her license is suspended or after it has been canceled pursuant to the foregoing provisions shall be subject to the penalties prescribed by section 4538 of the 1921 Compiled Laws of Colorado. These penalties, prescribe, among others, that any person convicted of not complying with the provisions of this act shall be punished by a fine of not less than $50 nor more than $300, or by imprisonment in the county jail for not less than ten days nor more than thirty days, or by both.

The state board of medical examiners will send out application blanks for registration to the last known address of all licentiates of the board during the month of December, 1929. If, for any reason, a licentiate should not receive such application blank before Jan. 1, 1930, he will confer a favor on the board as well as on himself by notifying the board of the circumstance and forwarding his present address. Dr. William Whitridge Williams is secretary-treasurer of the Colorado State Board of Medical Examiners, 224 State Capitol Building, Denver.

California July Examination

Dr. Charles B. Pinkham, secretary of the Board of Medical Examiners of the State of California, reports the written examination held at Los Angeles, July 8-11, and San Francisco, July 15-18, 1929. The examination covered 9 subjects and included 90 questions. An average of 75 per cent was required to pass. Two hundred and seven candidates were examined, 192 of whom passed and 15 failed. Ten physicians were licensed through reciprocity with other states. The following colleges were represented:

PASSED

College	Year Grad.	Number
College of Medical Evangelists	(1929)	42
Stanford University School of Medicine	(1928) 3, (1929)	37
University of California Medical School	(1929)	36
University of Colorado School of Medicine	(1928)	2
George Washington University Medical School	(1929)	1
Loyola University School of Medicine	(1929)	2
Northwestern University Medical School	(1929)	6
Rush Medical College	(1903) 1, (1925) 1, (1928) 1, (1929)	9
University of Illinois College of Medicine	(1927) 1, (1929)	4
State University of Iowa College of Medicine	(1928)	1
University of Louisville School of Medicine	(1928)	1
Tulane University of Louisiana School of Medicine	(1929)	4
Jefferson Medical College	(1928)	1
Johns Hopkins University School of Medicine	(1923)	1
University of Maryland School of Medicine	(1928)	1
Harvard University Medical School	(1927) 1, (1928)	1
University of Michigan Medical School	(1927) 1, (1928)	1
St. Louis University School of Medicine	(1929)	3
Washington University School of Medicine	(1928)	1
Creighton University School of Medicine	(1928) 2, (1929)	2
University of Nebraska College of Medicine	(1929)	3
Columbia University College of Phys. and Surgs	(1928)	1
University of Cincinnati College of Medicine	(1929)	2
University of Oklahoma School of Medicine	(1928)	3
University of Oregon Medical School	(1928) 1, (1929)	4
University of Pittsburgh School of Medicine	(1928)	1
Woman's Medical College	(1927)	1
University of Tennessee College of Medicine	(1929)	1
Vanderbilt University School of Medicine	(1928)	1
Marquette University School of Medicine	(1929)	1
University of Wisconsin Medical School	(1929)	1
Dalhousie University Faculty of Medicine	(1927)	1
University of Manitoba Faculty of Medicine	(1916)	1
University of Toronto Faculty of Medicine	(1929)	1
National University of Athens Faculty of Medicine	(1923)	1
University of Bonn Faculty of Medicine	(1923)*	1

FAILED

College	Year Grad.	Per Cent
College of Physicians and Surgeons, San Francisco	(1918)	48
Howard University School of Medicine	(1921)	67
Northwestern University Medical School	(1929)	74, 72
Rush Medical School	(1929)	74
State University of Iowa College of Medicine	(1928)	71, 72
Creighton University School of Medicine	(1929)	75†
University of Nebraska College of Medicine	(1929)	74
Queen's University Faculty of Medicine	(1915)	59
Laval University Faculty of Medicine	(1912)	47
National University of Mexico Faculty of Medicine	(1924)*	64
School of Medicine and Surgery of Guadalajara	(1922)	59
University of Vienna Faculty of Medicine	(1923)*	71
University of Glasgow Faculty of Medicine	(1890)	62

ENDORSEMENT OF CREDENTIALS

College	Year Grad.	Endorsement with
Rush Medical School	(1927) U. S. Navy, (1929)	U. S. Navy
University of Illinois College of Medicine	(1909)	U. S. Army
Indiana University School of Medicine	(1926)	U.S.P.H.S.
University of Minnesota Medical School	(1929)	U. S. Navy
Washington Univ. School of Med.	(1907) U.S.P.H.S., (1928)	U. S. Navy
University of Buffalo School of Medicine	(1917)	U. S. Army
Vanderbilt University School of Medicine	(1914)	U. S. Navy
University of Virginia Department of Medicine	(1898)	U.S.P.H.S.

* Verification of graduation in process.

† Fell below 60 per cent in more than one subject.

Kentucky Reciprocity Report

Dr. A. T. McCormack, secretary of the State Board of Health of the State of Kentucky, reports 21 physicians licensed by reciprocity since Aug. 16, 1929. The following colleges were represented:

LICENSED BY RECIPROCITY

College	Year Grad.	Reciprocity with
Rush Medical College	(1928)	Illinois
Indiana University School of Medicine	(1927), (1928)	Indiana
State University of Iowa College of Medicine	(1928)	Iowa
Kentucky School of Medicine	(1908)	W. Virginia
University of Louisville School of Medicine	(1925)	New Jersey
Columbia University College of Phys. and Surgs	(1891)	Ohio
Leonard Medical School	(1913)	W. Virginia
University of Cincinnati College of Medicine	(1925), (1928)	Ohio
University of Oklahoma School of Medicine	(1925)	Oklahoma
University of Pennsylvania School of Medicine	(1927)	Penna.
University of Pittsburgh School of Medicine	(1927)	Penna.

Meharry Medical College	(1928)	Tennessee
University of Tennessee College of Med.	(1927), (1928) (2)	Tennessee
Medical College of Virginia	(1927) (1928)	Virginia
University College of Medicine, Richmond	(1904)	Virginia
Dalhousie University Faculty of Medicine	(1925)	Nova Scotia

Dr. McCormack included also the name of a candidate that passed the June examination but was left off the report of that examination:

College	Year Grad.	Per Cent
University of Louisville School of Medicine	(1929)	87

Book Notices

HOOKWORM DISEASE: ITS DISTRIBUTION, BIOLOGY, EPIDEMIOLOGY, PATHOLOGY, DIAGNOSIS, TREATMENT AND CONTROL. By Asa C. Chandler, M.Sc., Ph.D., Professor of Biology, Rice Institute, Houston, Texas. Cloth. Price, $5. Pp. 494, with 33 illustrations. New York: Macmillan Company, 1929.

The present volume, which is a critical compilation and evaluation of the biologic and medical aspects of hookworm disease, is timely because the recent development of new research tools has resulted in an accumulation of new data that precludes any but the specialist from keeping abreast of recent work. The author has divided his subject into ten chapters. The first, consisting of an historical introduction, gives a sketchy history of the disease, from the problematic "ā ā ā" disease of the ancient Egyptians to the present. Although the main discoveries are noted, most students would have liked a further amplification of this section. The second chapter, which summarizes the geographic distribution of the infection, betrays the fact that there are large gaps in exact knowledge. Two chapters are devoted to such zoological questions as anatomy, classification, life cycle and physiology of the worms, and two to the closely related subject of the epidemiology of the infection. Chapter VII deals with the pathology of the disease; an interesting summary is given of "creeping eruption," produced by the subcutaneous wanderings of hookworm larvae which are abnormal to man. Chapter VIII, on diagnosis, contains not only the question of simple diagnosis but also a description of various quantitative methods. The latter, dating from Darling's worm count method and developing to the various modifications of Stoll's egg count method, are largely responsible for the recent advance in quantitative knowledge of the infection. In agreement with most workers in the field, the author feels that the egg count method of measuring the intensity of infection is a fairly accurate and practical procedure in spite of the many sources of error. Chapter IX summarizes the methods of treatment. Chapter X is a particularly conservative discussion of prevention and control. Most workers who have had tropical experience will agree with the author that, although hookworm disease is theoretically simple to control, there are vast difficulties in initiating the seemingly simple procedures. The author has appended a section on technical methods and a bibliography which gives the references cited in the text. The most striking development in the recent study of hookworm is the tremendous wealth of biologic material that is accumulating on this group of parasites. In no other parasitic form has such a concentrated attack been focused on questions of general physiology and behavior. Not only is this of biologic importance because it extends to parasites work which has been done so productively on free-living forms, but it is rapidly affecting problems of medical and public health significance. Professor Chandler has not only digested a wealth of factual material but has handled numerous controversial points with his own experienced and sane judgment. This is nowhere better illustrated than in the treatment of the somewhat polemical discussions regarding the several egg count methods that have arisen since Stoll perfected his technic. The book is well printed, illustrated and indexed. It will be indispensable to physicians or biologists who desire an up-to-date and authoritative review of hookworm disease. Practically the only criticisms that can be raised are matters of opinion. The data in some of the chapters would have been easier to assimilate had the author used summaries as he did in the chapter on treatment. Other portions of the text might have been clearer with a few more illustrations.

A PRACTICAL GUIDE TO THE SCHICK TEST AND DIPHTHERIA AND SCARLET FEVER IMMUNISATION. By Guy Bousfield, M.B., B.S., Medical Officer, Diphtheria Immunisation Clinics of Metropolitan Boroughs of Camberwell and Lambeth. Boards. Price, 5s. Pp. 72, with illustrations. London: J. & A. Churchill, 1929.

Although an extensive amount of literature relating to the Schick test has appeared, this volume contains valuable information not usually found between the covers of so small a book. The technic and interpretation of the Schick test are lucidly explained; also the variations in the preparation of the agent used for conferring an active immunity against diphtheria are discussed. Toxin-antitoxin, toxoid-antitoxin, and toxoid fall within the latter category. In the final chapter the Dick test is dealt with and the advantage of streptococcal toxin for active immunization against scarlet fever is referred to. While nothing new pertaining to the author's subject is presented, the health officer and the pediatrician will find this treatise worth reading for the purpose of refreshing the memory. The real aim of the book is to instruct the beginner, and this object is well served.

GASTRO-INTESTINAL DISEASES. Lectures Delivered at the James Mackenzie Institute for Clinical Research, St. Andrews Winter Session, 1927. Edited by Professor David Waterston, M.A., M.D., F.R.C.S., Bute Professor of Anatomy, University of St. Andrews. Cloth. Price, $3.25. Pp. 278, with illustrations. New York: Oxford University Press, 1928.

The material of this volume consists of a report of eleven lectures given at the James Mackenzie Institute by surgeons and internists. It embraces practical discussions of various features of gastro-intestinal disease. The relation of foci of infection in the mouth to eye conditions is emphasized. Other chapters deal with the physiology of digestion, with particular attention to appetite and hunger. A study of the areas of hyperesthesia and hyperalgesia in abdominal disease, together with some remarks on referred pain, follow. It is pointed out that gastric chemistry plays a minor part in the production of digestive symptoms and that disturbances in motility are much more important in this connection. The futility of so-called medical drainage of the gallbladder is pointed out, particularly in view of the fact that the harmful infection resides in the wall of the gallbladder rather than in the bile and is therefore inaccessible to this drainage. The importance of hematemesis is discussed and is considered an indication for operation. The surgical treatment of chronic and of perforated ulcers is discussed in some detail. The final chapters deal with the more recent views on carcinoma and abdominal diagnosis. This book is well worth reading as it contains the products of wide experience and is an exposition of much practical information in the field of gastro-enterology.

EXPERIMENTS AND OBSERVATIONS ON THE GASTRIC JUICE AND THE PHYSIOLOGY OF DIGESTION. By William Beaumont, M.D., Surgeon in the United States Army. Facsimile of the Original Edition of 1833 together with a Biographical Essay—A Pioneer American Physiologist. By Sir William Osler. Cloth. Price, $3. Pp. 279. Cambridge: Harvard University Press, 1929.

As a testimonial to the last International Physiological Meeting in Boston, the Harvard University Press has prepared a facsimile edition of the famous Beaumont work on the gastric juices. It prefaces the work with a reprint of Sir William Osler's sketch of Beaumont, "A Pioneer American Physiologist." The book is an absolute facsimile made by the zincograph process, a worthy addition to any medical collector's library.

MODERN METHODS OF TREATMENT. By Logan Clendening, M.D., Professor of Clinical Medicine, Lecturer on Therapeutics, Medical Department of the University of Kansas. With chapters on special subjects by H. C. Andersson, M.D., J. B. Cowherd, M.D., and others. Third edition. Cloth. Price, $10. Pp. 815, with 95 illustrations. St. Louis: C. V. Mosby Company, 1929.

The second edition of this work appeared only a year ago. The author has revised his work thoroughly, rewriting the material on diathermy and discussing the use of several new drugs. The book is, in every sense of the word, an individual textbook of therapy, reflecting its author's personality; occasionally it is lightened by anecdotes. Throughout, the reader is aware of the fact that the author is a dynamic person. He is not at all credulous in his therapy and he seems to be able to look at evidence critically. This is a textbook of therapeutics that is readable, sounder than most, and certain to be useful.

UEBER DIE ENTSTEHUNG DES MAGENGESCHWÜRS UND DAS PROBLEM SEINER BEHANDLUNG. Von Prof. Dr. H. Eggers. Würzburger Abhandlungen. Band VI, Heft 2. Von Prof. Dr. Joh. Müller. Paper. Price, 1.50 marks. Pp. 141-154. Leipzig: Curt Kabitzsch, 1929.

This pamphlet in fourteen pages outlines the theories of the origin and treatment of gastric ulcer. The condensation of this large quantity of material is well carried out. The review of the causes includes autodigestion, muscular spasm, arterial spasm, mechanical abrasion along the magenstrasse, and chronic gastritis of bacterial origin. The author believes that gastric ulcer is due to a primary or reflex arterial spasm of nervous origin, which secondarily produces a red infarct and opens a path for autodigestion. In common with leading European authorities on this subject, Eggers lays the blame on a congenital or acquired constitutional hyperexcitability of the nervous system, which in turn influences the arterioles. Various comments of the influence of diet are made. In the American schools the constitutional diathesis theory has not received much recognition or at the best is regarded as being only a milestone in the study of the etiology of gastric ulcer. Therapy is well outlined into medical and surgical, emphasis being laid on the medical. Under medical treatment, diet and parenteral therapy are suggested. The prophylactic and curative value of a well rounded diet is presented. Under surgical treatment, he claims that nerve section has failed. He states correctly that the high percentage of gastrojejunal ulcer after gastroenterostomy has induced a great number of surgeons to turn to gastric resection. He also mentions that the consequences of gastric resection are at times so unsatisfactory that it should not be invoked until medical treatment has been exhausted. Eggers believes that the treatment of gastric ulcer is still primarily a medical and not a surgical problem.

A REFERENCE HAND-BOOK FOR NURSES. By Amanda K. Beck, R.N. Sixth edition. Leatherette. Price, $1.50 net. Pp. 316, with illustrations. Philadelphia: W. B. Saunders Company, 1929.

This volume is regularly revised and reprinted because its tremendous usefulness makes it popular among the nursing profession. Here in small scope are innumerable tables of data, descriptions of drugs, weights and measures, dosages, methods for preparation of food, hints for nursing in every field, bandaging and what-not. The book is just the kind of ready reminder that a nurse with a slipping memory requires.

SELECTED READINGS IN PATHOLOGY FROM HIPPOCRATES TO VIRCHOW. Edited by Esmond R. Long, Professor of Pathology, University of Chicago. Cloth. Price, $4. Pp. 301, with 25 illustrations. Springfield, Illinois: Charles C. Thomas, 1929.

Few physicians are able to have in their own libraries original volumes by the great pioneers who have mapped the routes in any of the special fields of medicine. Professor Long has collected in one volume, beautifully printed and handsomely illustrated, sections from the works of many of the leaders in pathology. Each section is prefaced by a brief biographic note. There is probably no more pleasant and successful way for a medical reader to supply himself with a background in pathology than by a careful reading of this book. The process will be not only painless but actually happy.

OSTEOMYELITIS AND COMPOUND FRACTURES AND OTHER INFECTED WOUNDS; TREATMENT BY THE METHOD OF DRAINAGE AND REST. By H. Winnett Orr, M.D., F.A.C.S., Chief Surgeon of the Nebraska Orthopedic Hospital. Cloth. Price, $5. Pp. 208, with 54 illustrations. St. Louis: C. V. Mosby Company, 1929.

This is a valuable contribution to orthopedic industrial traumatic surgery. It deals particularly with methods for the treatment of infected wounds, especially of bones and joints, by drainage and rest. Immobilization as taught by Hugh Owen Thomas and John Ridlon constitutes the fundamental basis of the writer's point of view. Experience during the Great War convinced him that results from good splinting justified making antiseptic wound treatment secondary. Advocacy of protection and rest is insisted on as opposed to irrigation and motion.

The thesis of the book may be briefly summarized: 1. The use of antiseptics in the treatment of infected wounds has been developed to the point of abuse. 2. Infected wounds heal without the application of antiseptic agents of any kind. 3. Properly protected wounds will heal consistently without daily dressings or irrigation with antiseptics and in a way that is at once easier and better. 4. The important factors in securing these better results are: (*a*) adequate drainage; (*b*) primary asepsis or antisepsis when required; (*c*) immobilization of the injured parts; (*d*) protection of wounds against disturbance or reinfection.

The earlier chapters of the book state that a misuse of antiseptic methods has resulted from neglect of the teachings of Sir Joseph Lister and that this misuse was brought into still sharper relief during the period of the World War. The principles and technic of treatment outlined for compound fractures and osteomyelitis, in the later chapters of the book, rest on the surgical precepts of Hunter, Hilton, Lister and others.

A summary of the more essential components of the method would include: (1) primary extensive osteotomy; (2) primary asepsis or antisepsis; (3) provision for adequate drainage; (4) a postoperative dressing which protects and precludes reinfection, the dressing not being changed for some weeks; (5) avoidance of antiseptics and chemical irritants, and (6) immobilization-rest in the correct anatomic position.

There is included a series of discussions and reports of cases by other surgeons, commenting favorably on the Orr method, giving a clear-cut series of exhibits. They not only illustrate the success of the method but display various phases of the method and problems that arise as cases vary.

OXFORD MONOGRAPHS ON DIAGNOSIS AND TREATMENT. Edited by Henry A. Christian, M.D., Sc.D., LL.D., Hersey Professor of the Theory and Practice of Physic, Harvard University. Volume V: The Diagnosis and Treatment of Chronic Diseases of the Respiratory Tract with Especial Reference to the Lesions of the Trachea, Bronchi, Lungs, Pleura and Diaphragm. By Elmer H. Funk, M.D., Clinical Professor of Medicine and Therapeutics, Jefferson Medical College, Philadelphia. Cloth. Price, $100 per set of 10 volumes. Pp. 618, with 182 illustrations. New York: Oxford University Press, 1929.

The first four volumes of this series were reviewed in THE JOURNAL some months ago. The present volume is fully up to the standard of the previous numbers in the nature of the printing, the illustrations and the editing. Professor Funk concerns himself with the diseases of the respiratory tract. The volume has, like the other numbers in the series, the advantages of directness in its considerations. The present volume is essentially a practical volume. The discussions as to therapy are complete, scientific and thereby exceedingly useful. The book contains a large number of fine reproductions of roentgen-ray plates indicating fully the use of this method in diagnosis. The references to periodical literature are recent and detailed. The last section deals with tuberculosis succinctly. The volume is also provided with a thorough index.

STUDIES OF SAVAGES AND SEX. By Ernest Crawley. Edited by Theodore Besterman. Cloth. Price, $4.50. Pp. 300. New York: E. P. Dutton and Company, Inc.

In this volume have been collected a number of the occasional papers of Mr. Crawley, author of the "Mystic Rose," these papers having to do with the atavistic forms of various sexual performances. There are chapters on chastity among savages, forms of love, the practice of anointing, oaths and curses, birthdays and kissing. The casual reader will find to his bewilderment that modern men develop nothing in these fields, and that the limitations of sexual performances are quite definitely controlled by anatomy and physiology. The work is exceedingly interesting to every person who must seek in the lives of men interpretations for their activities.

THE ROAD TO HEALTH: The Jayne Foundation Lectures for 1929. By C.-E. A. Winslow, Dr.P.H., Professor of Public Health, Yale School of Medicine. Cloth. Price, $2. Pp. 151. New York: Macmillan Company, 1929.

Professor Winslow is a leader in the field of public health. The three lectures included in this volume concern man and his environment, the game of life, and the position of the physician in the modern state. The first lecture is a review of the way in which the bacteriologists and sanitarians have been able to free many communities from disease. The second chapter concerns personal hygiene and the way in which each of us must live to acquire long years. The final lecture is devoted to the physician as a citizen of the community. It recognizes the necessity for organization of medical practice to accomplish most and appreciates some of the great evils which must inevitably follow the commercialization in the field of medical care. The book stimulates thought and no doubt much of it along excellent lines.

Medicolegal

Implied Consent to Operation

(McGuire v. Rix et al. (Neb.), 225 N. W. 120)

The appellant, McGuire, sustained a comminuted fracture of the astragalus. A large part of the bone, perhaps one half, was forced out of the ankle joint and lodged under and distended the skin on the outer side of the foot. One of the appellees, Dr. Simpson, was called immediately. He administered an anesthetic and attempted to replace the dislocated fragment by external manipulation and extension. He was unable to do so, and then he took the patient to the hospital. Another of the appellees, Dr. Rix, a surgeon, was called in. Roentgenograms were made and the case studied, and about thirty-three hours after the accident the patient was anesthetized and put on the operating table. While she was under the anesthetic this second time, further efforts were made to reduce the fracture by extension and manipulation. These were unsuccessful. An incision was then made, and the fragments were restored to their proper places. The patient later brought suit against Rix and Simpson, based on alleged malpractice. The district court directed a verdict in their favor. From the judgment of that court the patient, McGuire, appealed to the supreme court of Nebraska. There the judgment was affirmed.

The trial court erred, contended the appellant, in directing a verdict for the appellees, because there was sufficient evidence to sustain the finding that they negligently failed to make proper efforts to reduce the fracture by external manipulation and extension before resorting to a surgical operation. The supreme court, however, thought that the evidence would not sustain such a finding. The appellees testified in effect that if they had persisted in manipulation and extension longer than they did they would have improperly exposed the injured muscles and other tissues to additional lacerations and danger of infection. How far such efforts should be pursued under all the circumstances was a question of professional judgment, which the appellees exercised. There was nothing to show that they were prompted by unworthy motives or that they acted in bad faith, or that they did not possess and exercise the degree of skill and care ordinarily possessed and exercised by physicians and surgeons in the community in which they practiced. A physician would hesitate to treat a case like the appellant's, if he could be held liable in damages for abandoning external manipulation, after having earnestly tried it until in his judgment further efforts would be hazardous and unavailing, and resorting to a surgical operation, the only alternative.

The appellant contended further that the case should have been submitted to the jury, because the appellees were negligent in failing to follow the usual and ordinary method of draining the injured ankle and wound, in failing to remove devitalized tissue, in failing to treat promptly necrosis of the ankle bones, and in permitting ankylosis of the ankle joint with the foot in a deformed position. But the burden of proof was on the appellant to prove that the appellees did not possess and exercise the degree of skill and care ordinarily possessed and exercised by physicians and surgeons in the vicinity where the case arose or to prove that actionable negligence was the proximate cause of the injury of which she complained. The drains of which the appellant complained extended through the ankle joint after the dislocated fragment of the crushed astragalus had been replaced through the incision. The weight of expert testimony showed conclusively that such drains were usually and ordinarily used in the community, by physicians and surgeons of the school to which the defendants adhered. Moreover, cogent reasons were given to explain the system of drainage adopted, in view of the lacerations caused by the dislocation. The fact that one of the experts called by the appellant condemned the system of drainage adopted, and approved another, did not raise a question of fact for the jury, for the reason that either one of two recognized methods may be employed without raising an imputation of negligence. Actionable negligence with respect to the other features of treatment, charged by the appellant, was not shown. A cure or restoration of the injured ankle to its normal condition was not warranted or implied by the relation of physician and patient. While the appellant's injuries and suffering made a strong appeal to sympathy, the evidence failed to show that they were attributable to actionable negligence on the part of the appellees.

As a further argument in support of her claim that the trial court erred in not submitting the case to the jury, the appellant pointed out the controverted issue that the appellant did not consent to a surgical operation. There was testimony, she contended, that the appellee, Rix, did not tell her that he would perform an operation, but told her that he would do no more than reduce the fracture and put the foot in a cast and that she could probably go home on the following day. The appellee Simpson, she contended, told her that she would probably be home on the following day and that cutting would not be necessary. Each appellee, however, denied the giving of any assurance that an operation would not be performed. But, said the court, even accepting as true the contention of the appellant as to what the appellees said to her, it does not necessarily follow that she did not consent to a necessary operation. At the time of the alleged conversations with the appellees, they had not together attempted to reduce the fracture by manipulation. If they made the remarks attributed to them, they may then have considered an operation unnecessary, although it appears that they had discreetly prepared for one. Their responsibility for an operation accrued when manipulation failed. The law did not require the appellees to restore the appellant to consciousness for the purpose of procuring consent to surgery, the only alternative in the line of the professional duty for which they were called. The use of anesthesia in modern surgery has modified to some extent the ancient rule of the common law requiring consent. Of course, the general rule requires the consent of the patient, but consent may be implied from the circumstances, and an operation without consent may be demanded by an emergency. The appellant willingly accompanied the appellee Simpson to the hospital for the purpose of having the fracture reduced. She knew that the appellee Rix, a specialist in surgery, had been called into the case. Appreciating the possibility of serious consequences, she told the appellee Rix not to cut her foot off. With her husband and two or three neighbors present in the hospital, she consented to the use of an anesthetic for the purpose of having the fracture reduced. The circumstances implied consent to whatever was necessary to accomplish that end. The evidence on this issue, when properly considered, would have supported no other conclusion, and the trial court did not err in so holding when it directed a verdict for the appellees.

Choice of Time and Place of Treatment

(Dabney v. Briggs (Ala.), 121 So. 394)

Briggs was awarded a verdict against Dabney because of alleged malpractice in the treatment of a boil on his finger. The trial court refused to grant a new trial, and Dabney thereupon appealed to the supreme court of Alabama. There Briggs argued that the refusal of a new trial was proper, since from the evidence the jury could properly have concluded that the defendant had been negligent, in that he (1) failed to sterilize the blade with which he opened the boil; (2) refused to treat the plaintiff when he came to the defendant's office for that purpose; (3) refused to treat the plaintiff in a certain hospital named by the plaintiff; (4) failed to amputate the plaintiff's finger when it should have been amputated, and (5) failed to drain the boil properly after the operation and improperly squeezed it to remove pus. The supreme court concluded, however, that the inferences drawn by the jury were in fact contrary to the weight of the evidence and ordered a new trial.

The undisputed evidence, said the supreme court, showed that the blade with which the boil was opened was sterilized. The defendant had a right to refuse to abandon other duties in order to make the plaintiff a preferred patient. The defendant was not negligent when he refused to treat the plaintiff in a hospital of the plaintiff's choice. The defendant offered to place him in another hospital, and the plaintiff had no right to compel his physician, the defendant, to treat him in a certain place, in the absence of proof that his physician's refusal to do so was purely whimsical or capricious. Failure to amputate the finger, said the court, was not per se evidence of negligence; the evidence showed that amputation should be the last resort

and should not be done as long as there was any reasonable possibility of saving the finger. The physician who succeeded the defendant in charge of the case amputated the finger, but the defendant might have amputated it if the plaintiff had gone to the hospital as the defendant advised him to do, when he discovered that the finger had suddenly grown worse. The evidence was conflicting as to the propriety of draining the wound. A medical book indicated that a drain should have been used, but experts testified that in the course of practice in the community it was not an invariable rule to use a drain; the propriety of using a drain was determined by the character of the boil. The defendant did not deem a drain necessary or proper, and his judgment was not seriously questioned in the evidence. There was no evidence as to the impropriety of the defendant's squeezing the boil to remove the pus. The plaintiff's testimony that such squeezing caused him pain should not outweigh the defendant's testimony as to the amount of pressure used; expert evidence showed that in such cases even slight pressure would cause pain.

An action for malpractice, said the court, can be sustained only on preponderating proof of failure on the physician's part to exercise that degree of care, diligence and skill ordinarily employed and exercised in like cases by physicians and surgeons in the same general neighborhood, pursuing the same general line of practice. A physician or surgeon, except by express undertaking, does not warrant a cure or a successful result and is not liable for an honest mistake or error of judgment in making a diagnosis or prescribing a mode of treatment, where the proper course is subject to reasonable doubt. Nor, said the court, citing 21 Ruling Case Law, 407, does the doctrine of res ipsa loquitur apply; the mere fact of infection following the opening of a boil, however closely it may follow in sequence of time, is not in and of itself evidence of negligence or unskilful or improper treatment.

Rights of Expert Witnesses

(People v. Cowles (Mich.), 224 N. W. 387)

The defendant, charged with statutory rape, offered evidence to prove acts of the prosecuting witness showing sexual perversion and lascivious conduct, inclusive of exposure of her person to schoolboys. This evidence was excluded. On appeal, the supreme court of Michigan held that its exclusion was error. It should have been received, not in extenuation of rape, but because of its bearing on the determination of the weight to be given the testimony of the prosecuting witness. The question was whether her mind was so warped by sexual contemplation and desires as to lead her to accept the imagined as real, or to fabricate a claimed sexual experience. Two medical practitioners, who had observed the prosecuting witness, were called by the defendant, and in answer to hypothetical questions they expressed the opinion that she was a pathologic falsifier, a nymphomaniac, and a sexual pervert. This testimony was admitted without objection and was for the jury to consider. It was error, said the supreme court, for the trial court to refer to these witnesses, in the charge to the jury, as "so-called" experts; the prefix "so-called" should not have been employed. It was error, too, to exclude these experts from the court room when the other witnesses were excluded. These experts were in attendance to give opinion evidence only. They knew nothing concerning the facts at issue, and it would have been helpful to them to be permitted to observe the demeanor and mental manifestations of the prosecuting witness in the court room. The prosecuting attorney committed prejudicial error when he held up to ridicule and scorn the two medical practitioners who had appeared as expert witnesses for the defendant, describing them as follows:

> I don't believe there was ever a more disreputable thing seen—I don't think there was anything more disreputable pulled off in a court of justice, than was pulled off by these two doctors. . . .
>
> Now, I would say, gentlemen, if these two doctors were to put on a stunt like that in a vaudeville show, they would go over big. They would get a big laugh. Dr. ———, sitting in the chair there, reminds me of an advertisement you have probably all seen. Mr. ——— is his attorney, and he has testified for Mr. ——— several times, quite often. You have seen the advertisement of the Victor phonograph, a little dog with his head cocked on one side, listening to one of those old-fashioned, large-horn phonographs; under, it says, "His Master's Voice." . . .
>
> Now, gentlemen of the jury, we all pay taxes for universities, and they turn out things like that. I ask you, gentlemen, what chance a girl has to defend herself against such testimony. And I tell [you] that those two doctors are worse than the Indian medicine men or negro voodoos. How any professional man can so prostitute his profession and come in here and swear to such statements as that in a court of justice is beyond me.

The prosecuting attorney had a right to analyze the testimony, to urge the jury, on reason existing in the case, to reject it, and to point out, if possible, its inapplicability. But invective, ridicule, injection of his belief, and innuendos were not proper argument and were unfair to the experts and prejudicial to the defendant.

It was improper, moreover, for the prosecuting attorney to say that, while the court fixes the amount to be paid to expert witnesses, "that don't prevent you from paying whatever you want to. . . . There is no penalty, if you pay more than the court allows." That was a misstatement of the law. Section 12557, C. L. 1915, makes it a contempt of court for any expert witness to receive, or for any person to pay, directly or indirectly, to such a witness, in excess of ordinary witness fees, a sum larger than that authorized by the court. The inference to be drawn by the jury from the statement made by the prosecuting attorney in this case was transparent and could not be countenanced. The conviction, because of the errors stated and one other, was reversed and a new trial granted.

Infection Following Use of Depilatory: Liability.—The plaintiff applied to her skin, under and adjacent to her armpits, a depilatory called "Neet," which she had purchased from the defendant. Soon thereafter she felt severe pain in her armpits and arms, and later pimples, boils and abscesses appeared. After a verdict for the defendant, the court granted the plaintiff a new trial, conceiving that it had erred in instructing the jury: "If you find and believe from the evidence that plaintiff's injuries, if any, were *caused* by infection after Neet was used by the plaintiff in her armpits, and that such infection came from some other *source* than from Neet, then your verdict must be in favor of the defendant." From the order for a new trial, the defendant appealed. The plaintiff urged that Neet might have been the *cause* of the infection, even though it was not the *source*, and that the defendant was liable regardless of the *source* of the infection if it was the probable result of the application. The St. Louis court of appeals, Missouri, however, held that the distinction was without any real difference; it therefore reversed the order of the trial court for a new trial and remanded the case with direction to enter a judgment in accordance with the verdict of the jury.—*Ansel v. Hannibal Pharmacal Co. (Mo.), 15 S. W. (2d) 375.*

Workmen's Compensation: Compensability for Disability in Cardiac Cases.—The employee had a weakened heart when he entered on his employment. He undertook to do an amount of walking which involved going up and down stairs. There was no particular instance of strain in the course of his work, and his ultimate breakdown appears to have been merely the natural effect of continued exertion on a heart already weakened by valvular disease. Under such circumstances, the workmen's compensation act does not apply; as a matter of law the suffering which the employee has undergone cannot be said to be the result of a personal injury arising out of the employment entitling him to compensation. The cases of heart lesions in which compensation has been allowed differ from this case in that there have been special acts or incidents bringing a sudden strain on the weakened heart.—*Burns' Case (Mass.), 165 N. E. 670.*

Society Proceedings

COMING MEETINGS

American Heart Association, New York, February 3. Dr. I. C. Riggin, 370 Seventh Avenue, New York, Executive Secretary.

American Society for the Study of Disorders of Speech, New York, December 30-January 1. Dr. Sara M. Stinchfield, Mt. Holyoke College, South Hadley, Mass., Secretary.

Medical Association of Porto Rico, San Juan, December 21-23. Dr. M. Pavia Fernandez, Salvador Brau 79, San Juan, Secretary.

Pacific Coast Surgical Association, Del Monte, Calif., February 7-8. Dr. E. L. Gilcreest, 384 Post Street, San Francisco, Secretary.

Society of American Bacteriologists, Ames, Iowa, December 30-January 1. Dr. James M. Sherman, Cornell University, Ithaca, N. Y., Secretary.

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL in continental United States and Canada for a period of three days. Issues of periodicals are kept on file for a period of five years only. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested). Periodicals published by the American Medical Association are not available for lending, but may be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

Annals of Surgery, Philadelphia

90: 801-960 (Nov.) 1929

*Acute Edema of Pancreas. E. Archibald, Montreal, Canada.—p. 803.
*Decompression of Heart. E. A. Graham, St. Louis.—p. 817.
Development of Surgery of Stomach. J. M. T. Finney, Baltimore. —p. 829.
Operation for Undescended Testis. A. D. Bevan, Chicago.—p. 847.
Total Cystectomy and Partial Prostatectomy for Infiltrating Carcinoma of Neck of Bladder: Eight Cases. E. Beer, New York.—p. 864.
Chronic Cystic Mastitis of Diffuse, Nonencapsulated, Cystic Adenomatous Type. J. C. Bloodgood, Baltimore.—p. 886.
*Surgical Treatment of Duodenal Ulcer. J. M. T. Finney and E. M. Hanrahan, Jr., Baltimore.—p. 904.
Relation of Biochemistry to Cancer. W. J. Mayo, Rochester, Minn. —p. 918.
Homotransplantation and Several Blood Groups. W. Dobrzaniecki, Lwów, Poland.—p. 926.
*Function of Gallbladder. J. E. Sweet, New York.—p. 939.
Temporary Bilateral Abductor Paralysis Without Nerve Injury After Thyroidectomy. F. W. Rankin, Rochester, Minn.—p. 948.

Acute Edema of Pancreas.—Archibald stresses the point that pancreatic edema may be recognized before operation. Certain clinical signs and symptoms point to the pancreas. Abnormally severe epigastric pain, radiating to the left; persistent epigastric tenderness on finger pressure, limited to the anatomic position of the pancreas; a Head zone of hyperesthesia in the left flank at the level of the eighth to the tenth dorsal; a transient hyperglycemia; a positive test for diastase or lipase in the blood or urine—all point only in the one direction, the pancreas. And if within a few days all these signs disappear, that very disappearance, corresponding to reabsorption of the pancreatic exudate, is a further link in the diagnostic chain. The diagnosis being established, operation is indicated. Archibald does not remove the gallbladder for cholelithiasis in the presence of pancreatitis but uses it rather for prolonged drainage, which in his experience has been the surest road to cure. If, on the other hand, stones are not found in the common duct or gallbladder, the safest course is to institute bile drainage through the gallbladder, for this provides a safety valve for any transient, increased pressure in the common duct and thereby tends to prevent a forcing of bile into the pancreatic duct.

Decompression of Heart.—Graham records two cases in which operations were performed for the deliberate purpose of decompressing a heart that was embarrassed by confinement within a bony chest wall. In neither case was the pericardium thickened and in the second case it was intentionally opened to permit an inspection of the interior. No fibrous adhesions between the two layers of the pericardium were found, and both layers seemed on inspection to be practically normal. One patient, aged 14, had frequent attacks of cardiac decompensation following an acute articular rheumatism. Under procaine anesthesia, the fourth and fifth ribs and costal cartilages, including the periosteum and perichondrium, were removed from the left border of the sternum to the anterior axillary line. The pericardium was not opened but seemed practically normal. The patient went through the operation in a very satisfactory manner. The most striking fact about the immediate result of the operation was the marked subjective improvement. The patient stated immediately that the palpitation and the sense of pounding in the precordium had entirely disappeared. For that reason he was able to sleep much better than before. The second patient was a girl, aged 5, who had cardiac decompensation following several attacks of rheumatic fever. An operation was performed, similar to the one which had been performed on the first patient. There seemed to be no pronounced change in the position of the heart after the removal of the ribs. The subjective improvement in this patient was as great as in the first patient. In addition, she apparently obtained definite objective improvement as shown by the disappearance of the raised venous pressure and of the nodal rhythm. In neither case were the ordinary indications for the Brauer operation of cardiolysis present, such as positive evidence of a tethering of the heart by adhesions. For this reason, therefore, the beneficial results seem to have been due entirely to the effect of a decompression.

Surgical Treatment of Duodenal Ulcer.—Finney and Hanrahan conclude that the immediate results obtained by either medical or surgical treatment are essentially the same; the late results favor surgical treatment, as 90 per cent of those patients who survived the first six months following either gastroenterostomy or pyloroplasty were improved or cured by the operation; pyloroplasty, in properly selected cases, is the operation of choice, by reason of the lower mortality within the first six months after operation.

Function of Gallbladder.—Sweet suggests that the function of the gallbladder is to receive and return to the body the bile which is formed during the intervals between active digestion, the purpose being to conserve these biliary elements during a period when they might otherwise be lost. It is possible that the essential function of the gallbladder is to carry out the same process during the months of fetal life, when no digestion is going on in the intestine. Such a concept would explain the occurrence of icterus neonatorum; the fetal bile circulation through the gallbladder continues, but the bile pigments are not removed from the fetal circulation by the placenta. Therefore, a jaundice occurs until the introduction of food into the intestinal tract opens the papilla of Vater. Such a concept might explain the fact that fetal blood regularly shows a hyperbilirubinemia. It would explain the physiologic hyperbilirubinemia of pregnancy as well as the steady increase of bile salts in the blood of pregnant women; herein might also be found, possibly, an explanation for the well established relationship between pregnancy and gallstone formation. If the gallbladder empties through the cystic duct, the element of "stasis" enters into the problem of gallstones. If the gallbladder is an organ of absorption, gallstones will appear, if this absorbing mechanism is incompetent, as in cholecystitis; or if the material coming to the gallbladder is abnormal, that is, nonabsorbable. And then will happen what the surgeon not infrequently sees, and what is so often found in the necropsies of people past 50 years of age—gallstones in a perfectly normal gallbladder. It will then have to be admitted that gallstones are not necessarily a product of the gallbladder—in fact are uncommonly a gallbladder product; and, therefore, the removal of the stones, or the removal of the gallbladder, will not necessarily cure the patient of his basic disease.

Archives of Ophthalmology, Chicago

2: 521-634 (Nov.) 1929

Asteroid Hyalitis: Microchemical and Histologic Observations. T. B. Holloway and W. E. Fry, Philadelphia.—p. 521.
*Eye in Diabetes Mellitus. M. Cohen, New York.—p. 529.
Allergic Phenomena in Tuberculous Keratitis: Two Cases. C. W. Tooker, St. Louis.—p. 540.
*Retinoblastoma in Homologous Eyes of Identical Twins. W. L. Benedict, Rochester, Minn.—p. 545.
Complete Exenteration of Orbit by Means of Electrocautery for Neglected Epithelioma of Eyelids: Case. E. B. Heckel, Pittsburgh.—p. 549.
Hemorrhages in Fundi in Hypertension. F. Lange, Munich, Germany. —p. 551.
Eye Symptoms and Parkinsonian Syndrome. L. J. Goldbach, Baltimore. —p. 555.
Homonymous Hemianopsia During Pregnancy Aided by Reflecting Prism. C. A. Young, Roanoke, Va.—p. 560.
*Eye Manifestations in Fracture of Skull. G. A. Blakeslee, New York. —p. 566.
Experimental Production of Iritis. A. L. Brown and C. Dummer, Cincinnati.—p. 573.
Interstitial Keratitis. C. A. Clapp, Baltimore.—p. 580.

Eye in Diabetes Mellitus.—Cohen asserts that the ocular lesions complicating diabetes are varied and occur in from 20 to 30 per cent of the cases. Retinitis is the most frequent lesion of the eye associated with diabetes. The other diseases of the eye which more rarely accompany diabetes are cataract, chronic retrobulbar neuritis, muscular disorders, disturbances of accommodation, refraction and iritis. These conditions also

may exist independently of the diabetes. Such lesions as thrombosis of the retinal veins, with or without hemorrhages, proliferating retinitis and secondary glaucoma, which are recorded as the result of diabetes, as a matter of fact rarely occur during its course. They are of vascular origin and exist coincidentally with the diabetes. In young adults suffering from grave diabetes with lipemia and coma, the condition of the eye is known as lipemia retinalis. This is the only lesion of the fundus which may be considered as pathognomonic of diabetes. Children rarely show any complications of the eye in this disease.

Retinoblastoma in Homologous Eyes of Identical Twins.—Benedict reports the cases of twin girls, one of whom had a tumor in the left eye and the other a tumor in each eye. There are several reasons for considering these girls identical or enzygotic twins. The occurrence of the tumors in similar situations in the left eyes lends support to the theory that these tumors develop from fetal rests that probably go back to the single ovum from which such twins develop.

Eye Manifestations in Fracture of Skull.—Six hundred and ten persons with fractures of the skull of all types were examined by Blakeslee, and of this number 78 per cent showed eye signs. Of all these persons 39.5 per cent died, and of these about 31 per cent had eye manifestations. About 8 per cent of those who had no eye signs died. Nearly all the patients had subdural hemorrhage and either punctate or more severe lacerations of the brain. Four were proved to have middle meningeal hemorrhage together with epidural hemorrhage. Ecchymosis in the eyelids and subconjunctival hemorrhage were frequently present and often followed fracture distant from the frontal and orbital bones. Extrinsic eye muscle paralysis was most frequent in the muscles supplied by the third cranial nerve, and usually it was not permanent. Nystagmus was infrequent. Pupillary phenomena were the signs most frequently observed. Prognosis for life in the cases with fixation of the pupils, whether dilated or contracted, was always poor. As a general rule, the patient with a fractured skull who showed eye signs had much less chance of eventual recovery than one whose eyes played no part in the clinical picture.

Arkansas M. Soc. Journal, Little Rock

26: 113-140 (Nov.) 1929

Treatment of Gonorrhea. T. N. Black, Hot Springs.—p. 113.
Problem of Pyelitis in Chicago. C. K. Smith, Kansas City, Mo.—p. 120.
Phases of Acute Streptococcic Infection. S. F. Hoge, Little Rock.—p. 126.

Canadian Public Health Journal, Toronto

20: 531-582 (Nov.) 1929

Universal Pasteurization Our First Objective. W. J. Bell, Toronto.—p. 531.
Public Health Progress in Province of Quebec During Last Twenty-Five Years. E. Nadeau, Montreal.—p. 536.
Teaching Medical Students Importance of Environment. W. H. Hattie, Halifax, N. S.—p. 541.
Relative Frequency of Tuberculosis of Bovine Origin in Europe and America. J. Miller, Kingston.—p. 545.
Recent Recommendations in Vaccination. N. E. McKinnon and R. D. Defries, Toronto.—p. 552.

Kentucky M. Journal, Bowling Green

27: 487-538 (Nov.) 1929

Practical Demonstration in Control of Scarlet Fever. J. L. Jones, Louisville, and J. W. Armstrong, Berea.—p. 490.
Laboratory Work in Scarlet Fever Epidemics at Berea, 1929. L. H. South and E. H. Sandlin, Louisville.—p. 503.
Heart in Acute Communicable Diseases. M. M. Weiss, Louisville.—p. 504.
Glycosuria. L. L. Smith, Louisville.—p. 510.
Synopsis of Tuberculin in Treatment of Tuberculosis. E. McD. Trabue, Louisville.—p. 515.
Peripheral Nerve Tumors. R. P. Ball, Louisville.—p. 520.
*Lobectomy for Left Occipital Lobe Tumor. R. G. Spurling, Louisville.—p. 525.
Postoperative Care of Surgical Cases of Abdomen. H. G. Bell, Cincinnati.—p. 528.
Palm Abscess. B. A. Washburn, Paducah.—p. 529.
Purpura Hemorrhagica: Splenectomy: Recovery. L. W. Frank, Louisville.—p. 531.
Squint. A. O. Pfingst, Louisville.—p. 532.

Lobectomy for Left Occipital Lobe Tumor.—Spurling relates the case of a woman, aged 22, who was admitted to the hospital with a provisional diagnosis of meningitis or encephalitis. In April, 1929, she began to suffer from severe headaches and pain in the back of the neck. The headaches were located chiefly over the occipital region and were severe enough to incapacitate her. When the headaches were most severe, she noticed stiffness and pain in the entire cervical region of the spine. Shortly after the onset of these symptoms, she began to vomit. The vomiting was not preceded by nausea. She had noticed for several months that the vision to the right side was not so acute as to the left side. A clinical diagnosis of occipital lobe tumor was made but, in view of the contradictory roentgen observations, a ventriculogram was decided on. The ventricular needle was inserted into the left occipital region. At a depth of 1 cm. below the cortex, a cyst containing yellow fluid was encountered. This fluid clotted on standing. Air was not injected. As the fluid encountered was found to be due to a cyst in the occipital lobe, a preoperative diagnosis of astrocytoma was made. At operation a solid growth was found below the cortex of the occipital lobe. Total enucleation of the tumor was impossible, so it was decided to excise the entire lobe. The cortical vessels were ligated with silver clips just behind the postcentral gyrus, care being taken to avoid the middle cerebral artery. After the vessels were ligated, the lobe was excised with little bleeding. The tumor had extended forward in the ventricle into the parietal lobe, and this was thoroughly enucleated after the lobe had been excised. After the bleeding was carefully controlled, the wound was closed in layers. The dead space in the occipital region was drained for twenty-four hours. The patient made an uneventful postoperative convalescence. For the first few days following the operation, there was a right hemiparesis and marked aphasia. These symptoms have slowly cleared up, and, three weeks after the operation, she was able to speak with some hesitation, and the right arm and leg were practically normal. Mentally, she is alert and in full command of her mental faculties. Her vision has improved. The right homonymous hemianopia is permanent, since the occipital lobe has been totally removed.

New York State J. of Medicine, New York

29: 1305-1368 (Nov. 1) 1929

Adenomata of Thyroid. H. M. Clute, Boston.—p. 1305.
Sickness in Essex County. J. V. De Porte, New York.—p. 1310.
Child Welfare Survey of Saratoga County. J. R. MacElroy, Jonesville.—p. 1316.
Rural Typhoid Carriers. F. W. Laidlaw, Middletown.—p. 1318.
Treatment of Varicose Veins of Legs by Chemical Methods. J. E. Sutton, Jr., New York.—p. 1319.
Intestinal Intoxication: Toxicity Appraisal of Intestinal Bacteria by New Method. C. W. Lieb and G. H. Chapman, New York.—p. 1323.
Diabetic Surgery: Cases. E. S. Van Duyn and M. E. Holmes, Syracuse.—p. 1325.
Treatment of General Peritonitis. R. F. Carter, New York.—p. 1339.

Northwest Medicine, Seattle

28: 485-534 (Nov.) 1929

Gross Hemorrhage into Upper Gastro-Intestinal Tract. H. L. Bockus, Philadelphia.—p. 485.
Surgical Lesions of Duodenum. R. L. Sanders, Memphis, Tenn.—p. 495.
Undulant Fever. G. M. MacGregor, Kent, Wash.—p. 500.
Undulant Fever and Tularemia. J. R. Coffey, Portland, Ore.—p. 505.
Injection Treatment of Varicose Veins and Sequelae. G. H. Wahle, Boise, Idaho.—p. 508.
*Diabetes. L. J. Palmer, Seattle.—p. 513.
*Microscopic and Serologic Tests for Syphilis. W. Levin, Portland, Ore.—p. 517.
Progress of Social Hygiene in Washington. W. R. Jones, Seattle.—p. 521.
Rheumatic Syndrome in Children. T. H. Coffen and H. P. Rush, Portland, Ore.—p. 524.

Diabetes.—A series of 300 cases of diabetes is analyzed by Palmer. There was an hereditary or familial history in 20 per cent. The highest blood sugar on admission was 1,500 mg. per hundred cubic centimeters (died) and 1,000 mg. per hundred cubic centimeters (lived). The total number of operations was fifty-two. Mortality was 3.8 per cent. The number of cases of diabetic coma was two. Cardiovascular-renal disease caused the greatest number of deaths, infection second and coma third, the three together causing 82 per cent of the known deaths. Arteriosclerosis was present in at least a demonstrable degree in 40 per cent of the cases and to a severe degree in 6 per cent. Gallbladder disease was present in 15 per cent. Sixty-four per cent of the males and 82 per cent of the females had been overweight when first examined. In 55 per cent of the

series the blood sugar taken fasting one year after being placed on management averaged 186 mg. per hundred cubic centimeters. Forty-six per cent of the known living had had diabetes five years and 12 per cent ten years. Thirty-seven per cent of the known dead had had diabetes five years and 20 per cent ten years. The total mortality was 27.6 per cent.

Microscopic and Serologic Tests for Syphilis.—Levin favors the Kahn test. In more than 20,000 specimens tested (including serums and spinal fluids), the Kahn test has consistently "picked up" more positive reactions than the Wassermann. Out of 434 specimens examined by the dark field 188, or 43 per cent, yielded *Spirochaeta pallida.*

Oklahoma State M. Assn. Journal, Muskogee

22: 375-406 (Nov.) 1929

Postoperative Thrombosis and Pulmonary Embolism. P. P. Nesbitt, Tulsa.—p. 375.
Bronchoscopic Treatment of Abscess of Lung: Case. J. C. MacDonald, Oklahoma City.—p. 377.
Enterostomy and Sodium Chloride Therapy in Peritonitis. T. G. Orr, Kansas City, Mo.—p. 378.
Visceroptosis and Relation to Abdominal Surgery. I. B. Oldham, Jr., Muskogee.—p. 382.
Tannic Acid Treatment of Burns. S. E. Kernodle, Oklahoma City.—p. 384.
Spinal Anesthesia. W. C. Vernon, Okmulgee.—p. 387.
*Intracisternal Treatment of Neurosyphilis. C. R. Rayburn and D. W. Griffin, Norman.—p. 389.

Intracisternal Treatment of Neurosyphilis.—Rayburn and Griffin report their experience with this treatment in twenty-two cases, in which 119 punctures with intracisternal medication have offered no complaints, and no complications of any importance have been noticed. Headaches following the punctures and treatments have been negligible, and "nil" when comparing them to the postspinal headaches which are so frequent after simple drainages from the lumbar region.

Southern Medical Journal, Birmingham, Ala.

22: 955-1048 (Nov.) 1929

Experimental Studies on Calmette's B C G Vaccine. W. Litterer, Nashville, Tenn.—p. 955.
*Prognosis in Advanced Pulmonary Tuberculosis Under Sanatorium Treatment. H. T. Floyd, Oteen, N. C.—p. 962.
*Incidence of Goiter Among Adults in Nashville, Tennessee. J. B. Youmans, Nashville, Tenn.—p. 966.
Bilateral Traumatic Dislocation of Hips: Case. H. G. Hill and J. Penn, Memphis, Tenn.—p. 972.
Isolated Exostoses or Osteochondromata of Developmental Type. O. L. Miller and W. M. Roberts, Gastonia, N. C.—p. 974.
*Recovery of Bacillus Fecalis-Alkaligenes from Gallstones. W. W. Daniel and E. H. Greene, Atlanta, Ga.—p. 977.
Dilatation of Duodenum. J. C. Bloodgood, Baltimore.—p. 980.
Medical Aspect of Chronic Duodenal Stagnation. S. K. Simon and D. C. Browne, New Orleans.—p. 990.
Roentgen Aspect of Duodenal Dilatation. W. F. Henderson, New Orleans.—p. 994.
Lupus Erythematosus. C. Swanson, Atlanta, Ga.—p. 1001.
Sun Baths for Children. L. W. Elias, Asheville, N. C.—p. 1003.
Myiasis. G. B. Lawson, Roanoke, Va.—p. 1003.
Undulant Fever: Six Cases. E. F. Wahl and M. J. Erickson, Thomasville, Ga.—p. 1005.
Newer Knowledge of Heart Disease: IV. Causes of Heart Failure. T. R. Harrison, Nashville, Tenn.—p. 1009.

Prognosis in Advanced Pulmonary Tuberculosis Under Sanatorium Treatment.—Detailed study of case records of 500 consecutive cases of advanced pulmonary tuberculosis, treated under a strict regimen of bed rest, was made by Floyd. Favorable reaction was considered to have been obtained only when clinical signs of improvement were confirmed by improvement in the lungs as revealed by stereoroentgenogram. Favorable reaction was obtained within three months in 88 per cent of the moderately advanced cases, in 73 per cent of the far advanced A cases and in 33 per cent of the far advanced B cases. No far advanced C cases showed improvement in the pathologic process. In the group showing a favorable reaction there is an incidence of relapse of 1 per cent a month and 1.7 per cent a month in the far advanced A cases and far advanced B cases, respectively. The mortality rate in the far advanced A cases was 0.3 per cent a month; in the far advanced B cases, 2.6 per cent a month; in the far advanced C cases, 11.3 per cent a month.

Incidence of Goiter Among Adults in Nashville.—Eighty-five goiters were found by Youmans among 500 adult colored and white patients of both sexes, a total incidence of 17 per cent. A much higher incidence was found in women at certain age periods, the maximum (42 per cent) occurring in white women during the fifth decade. The total incidence was about four times greater in women than in men and was slightly less among the colored than among the white patients. Both white and colored women showed an increasing incidence with advancing age up to a maximum at the fifth and sixth decades, respectively. Men showed a maximum incidence during the second and third decades with a sharp drop thereafter, and a secondary rise in the colored men at 40 to 49. The occurrence of goiter in this locality may probably be attributed in part to primary iodine deficiency, although sufficient data in regard to the iodine supply of the region is not available to determine this definitely. It is suggested that improper diet and poor hygienic conditions may be additional factors of etiologic importance in the group studied.

Recovery of Bacillus Fecalis-Alkaligenes from Gallstones.—A systemic infection by *Bacillus fecalis-alkaligenes,* liberated at the time of a cholecystostomy and having the general characteristics of typhoid, is reported by Daniel and Greene. They believe that a more careful laboratory study of prolonged febrile conditions will raise the incidence of this condition, which is probably often diagnosed and treated as typhoid or paratyphoid fever.

Virginia M. Monthly, Richmond

56: 499-570 (Nov.) 1929

Physician's Responsibility to Patient and to Public and Public's Obligation to Their Physicians. J. B. Jones, Petersburg.—p. 499.
Marion Sims. S. Leigh, Norfolk.—p. 502.
Factors in Prognosis of Arterial Hypertension. B. P. Seward, Roanoke.—p. 506.
Fundamental Causes of Alcoholism and Suggestions as to Treatment. W. C. Ashworth, Greensboro, N. C.—p. 510.
Enteric Intussusception in Animal Following Ice-Water Administration. S. W. Britton, University.—p. 515.
Etiology, Pathology and Diagnosis of Appendicitis. G. H. Reese, Petersburg.—p. 516.
Paranasal Sinuses in Pediatrics. J. F. Woodward, Jr., Norfolk.—p. 520.
Surgical Consideration of Dyspepsias Caused by Gastric and Duodenal Ulcers. E. Horgan and J. Horgan, Washington, D. C.—p. 523.
Undulant Fever Due to Infection with Brucella Abortus. J. W. Towey, Powers, Mich., and L. Guy, New York.—p. 526.
Incidence and Early Diagnosis of Pyorrhea Alveolaris in Childhood. W. E. Chapin, Richmond.—p. 528.
Miliary Abscesses of Lung. A. E. Seeds, University.—p. 530.

Wisconsin M. Journal, Madison

28: 509-576 (Nov.) 1929

Measles Control. J. P. Koehler, Milwaukee.—p. 509.
Chronic Infections of Prostate Gland. J. B. Wear, Madison.—p. 510.
Management of Prostatic Obstruction. V. C. Hunt, Rochester, Minn.—p. 512.
Acute Lymphatic and Myelogenous Leukemias: Two Cases. H. E. Marsh and G. H. Ewell, Madison.—p. 518.
*Colloid Lability Test in Tuberculosis. A. L. Banyai and S. V. Anderson, Wauwatosa.—p. 520.
Embolectomy: Case. J. P. Dean and M. H. Wirig, Madison.—p. 524.
Cardiospasm and Concomitant Esophageal Diverticulum: Case. J. P. Zohlen, Sheboygan.—p. 526.
Liver Notch Adhesions Following Cholecystectomy: Cases. W. J. Tucker, Ashland.—p. 528.
Play Safe—Use Diagnostic Aids! A. A. Pleyte and A. Weinstock, Milwaukee.—p. 529.
Give the Grass a Chance. F. I. Drake, Milwaukee.—p. 530.

Colloid Lability Test in Tuberculosis.—A study of the colloid lability test in 219 cases has convinced Banyai and Anderson that the test is not a specific reaction and cannot therefore be used for diagnosis. Positive reaction occurs in conditions caused by focal or systemic infection and in cases of tissue disintegration. Tuberculosis does not necessarily produce a positive reaction. Two and one tenth per cent of far advanced, 14 per cent of the moderately advanced and 38.4 per cent of the incipient cases gave a negative reaction. In the majority of positive cases there is a definite parallelism between the colloid lability reaction and the extent and activity of the lesion. There is a close relationship between the colloid lability test on the one hand and the blood cell sedimentation test and monocyte-lymphocyte ratio on the other. Repeated tests may serve as useful indicators of immunologic changes in the body and may help in the clinical management of cases. The colloid lability test should never be considered alone. It is an appreciable aid only in connection with complete clinical and laboratory data.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

2: 703-744 (Oct. 19) 1929

Mechanism of Abdominal Pain. C. H. Mayo.—p. 703.
Abdominal Pain. E. F. Buzzard.—p. 705.
*Conditions Simulating Pulmonary Tuberculosis: Pneumonoconiosis and Bronchiectasis. F. G. Chandler.—p. 706.
Pharmacologic Aspects of Avertin. F. B. Parsons.—p. 709.
Avertin Narcosis. G. Edwards.—p. 713.
*Treatment of Torticollis. B. W. Howell.—p. 714.
*Congenital Polycystic Disease of Kidneys and Liver. G. C. Campbell. —p. 716.
Simple Mastoiditis with Symptoms of Cerebral Abscess. H. V. O'Shea. —p. 717.
Inguinal Hernia in Monorchid. H. Dass.—p. 717.
Twin Breech Confinement. F. G. Cawston.—p. 718.

Conditions Simulating Pulmonary Tuberculosis.—Chandler discusses the differential diagnosis of pulmonary tuberculosis and pneumonoconiosis, lymphadenoma, syphilis, new growth, bronchiectasis and mitral stenosis. What he says might be crystallized in one sentence: It is by bacteriologic examinations of the sputum and feces, and by these examinations almost alone, that a diagnosis of pulmonary tuberculosis can be established or excluded in the vast majority of cases.

Treatment of Torticollis.—Howell has operated in twenty-four cases of torticollis, of which twenty-three were of the true congenital variety and one an acquired case of spasmodic torticollis. The operation in this particular case consisted in crushing, and thereby paralyzing for some months, the muscular branches of the spinal accessory nerve which supply the sternomastoid, with complete relief for a considerable time. Of the twenty-three cases of true congenital torticollis operation was performed in all except three by the subcutaneous method, the sternal end of the muscle being divided with a blunt Jones tenotome. Of the three cases treated by open division of the sternomastoid, the incision was made in two at the lower end, and in one at the upper end below the mastoid process. The latter case was the only one in which an incomplete cure resulted from the subcutaneous division of the sternal end. Open division of the upper end resulted in a complete cure, the operation scar being hidden by the hair.

Congenital Polycystic Disease of Kidneys and Liver.—Campbell's case had been diagnosed as Addison's anemia. The patient was ordered to rest, and was treated by means of liver, arsenic and hydrochloric acid. Following the adoption of this treatment, especially after taking the liver, he vomited several times, and the administration of liver was therefore stopped. Two days later he had a copious bright red hemorrhage from the rectum; rectal examination revealed no abnormality. A blood count showed marked diminution in the number of red cells but no obvious change in the white count. The urine was pale; its specific gravity was 1.010; it contained no sugar, but traces of albumin and an occasional cast were found. The optic disks though pale were normal, and no retinal hemorrhages were seen. The patient began to be rather sleepless, and there was marked tremor of the fingers. The bleeding from the rectum persisted in spite of treatment. At postmortem both kidneys were found to be equally enlarged and cystic. The liver was uniformly enlarged. Its whole substance was thickly studded with small cysts. No cysts were seen in the pancreas, and no pathologic condition was found in any other organ. The patient's family history appears to confirm the theory that a predisposition to the disease is hereditary, since two of its members were known to have suffered from cystic disease, and five others may have done so.

2: 791-838 (Nov. 2) 1929

Borderline Problems in Childhood. A. D. Fordyce.—p. 791.
Papilloma of Bladder. J. B. MacAlpine.—p. 794.
Combination of Colloidal Lead Selenide (D48) and Radium in Treatment of Cancer. A. T. Todd and H. M. Aldwinckle.—p. 799.
*Hyoscine Amnesia in Labor. D. R. Jennings.—p. 801.
Respiratory Failure Due to Cerebral Abscess. A. Anderson.—p. 802.
Nasal Discharge in Childhood. F. B. Gilhespy.—p. 803.
Persistent Nasal Catarrh in Children. D. Guthrie.—p. 805.
Asthma and Urticaria. F. F. Wheeler.—p. 806.
Spontaneous Rupture of Uterus: Case. I. H. K. Stevens.—p. 806.

Scopolamine Amnesia in Labor.—This anesthetic was employed by Jennings in twenty-four patients, sixteen primigravidas and eight multigravidas. In all except one there were occipito-anterior presentations; the one exception was a breech presentation with extended legs in a multigravida. Twenty of the patients had normal deliveries; two patients required the application of low forceps. Open ether was administered with apparent safety and ease to the three patients requiring assistance. An interesting feature of this treatment was the fact that the babies at birth showed signs of active life rather more readily than in normal cases. All were born alive, the majority presenting a high pinkish hue on delivery. No trouble was experienced with the third stage of labor. The average duration for all cases was fifteen minutes twelve seconds. The loss of postpartum blood was small.

Lancet, London

2: 911-962 (Nov. 2) 1929

Circumstances in Life and Times of William Harvey. W. Herringham. —p. 911.
*Effect of Radiant Heat on Production of Actinic Erythema. F. M. Shattock and M. D. Waller.—p. 917.
Observations on Vaccination. S. P. Bedson.—p. 920.
Medicolegal Significance of Blood Groups. F. Schiff.—p. 921.
Abdominal Aortic Aneurysm: Case. J. K. Rennie.—p. 923.
Persistence of Anaerobic Bacteria in War Wounds. R. J. V. Pulvertaft. —p. 924.

Effect of Radiant Heat on Production of Actinic Erythema.—Experiments were made by Shattock and Waller to ascertain whether the addition of "radiant heat" rays had any appreciable effect, either synergic or antagonistic, on the production of actinic erythema, and whether, if any such effect is noted, it can be attributed to some "physiologic" action or "physical" cause. They found that heating tissues by radiation or by conduction (radiator, hot water in vessel) after exposure to ultraviolet radiation diminishes—or suppresses—the actinic erythema and delays its appearance. Heating of tissues by radiation or conduction before exposure to ultraviolet radiation increases the actinic erythema. The time of appearance of the actinic erythema is not appreciably influenced. Heat (radiant heat or hot air draft) applied simultaneously with ultraviolet irradiation diminishes—or suppresses—the actinic erythema and delays its appearance. Differences in color as well as differences in depth of reaction are noticeable. The actinic erythema of the heated skin is more scarlet or vermilion (similar in color to the primary erythema), as compared with the actinic erythema produced by the mercury vapor or water filtered carbon arc light, which is more crimson or carmine. Differences of from 20 to 30 per cent of exposure to ultraviolet rays are necessary to produce visual differences in the erythema. Smaller percentage differences of exposure to a given source of radiation will give appreciable differences in the latent period—i. e., the time elapsing before the appearance of erythema. The diminution of actinic erythema by heating the tissues, either with radiant heat or by conduction, during ultraviolet irradiation, suggests a "physiologic" rather than a "physical" cause for the diminution observed. The fact that at least equally satisfactory diminution of erythema can be obtained by heating after irradiation with ultraviolet rays cannot be explained on the basis of physical interference or antagonism of the rays. The observed action of ultraviolet rays on the sensitiveness of the skin to thermal stimulation appears to be immediate. It is suggested tentatively that this action may be a factor in determining the degree of actinic erythema in cases in which heat is applied simultaneously or after ultraviolet irradiation.

Japanese J. of Obstet. & Gynecology, Kyoto

12: 182-278 (Sept.) 1929

Investigation of Ferments in Secretion of Ovarian Cysts: IV. Trypsin. T. Tachibana.—p. 182.
Id.: V. Invertase and Lactase. T. Tachibana.—p. 190.
Id.: VI. Pepsine and Ferments Decomposing Glycocoll and Asparagin. T. Tachibana and M. Abe.—p. 200.
Obstetric Significance of Abnormal Occipital Squama in Fetus. M. Oku. —p. 214.
*Birth Injuries in New-Born: V. Diagnosis of Intracranial Hemorrhage in New-Born Children by Roentgen Rays. H. Yagi.—p. 223.
Embryologic Study of Nervous System of Various Organs of Human Fetus: I. Cardiac Nerves of Human Fetus. K. Ihdima.—p. 234.
Genesis and Therapy of Hyperemesis Gravidarum. T. Nonaka.—p. 255.
Normal Agglutinin Against B. Typhosus in Blood of Patients with Uterine Cancer. T. Sato and Y. Katsu.—p. 261.
Effect of Serum on Autolysis of Uterine Mucosa. T. Tachibana and S. Inouye.—p. 266.

Pigment Absorption in Blood: III. Effect of Toxemia Due to Various Chemical Poisons on Pigment Absorption. Sh. Yunoki.—p. 269.
Ovarian Extract to Hypoplasia of Internal Genitals. M. Oike.—p. 270.
Iron Content in Maternal and Fetal Blood. S. Nakayama and S. Inoue. —p. 273.
Permeability of Placenta. K. Shi.—p. 275.

Diagnosis of Intracranial Hemorrhage in New-Born Children by Roentgen Rays.—In about thirty cases Yagi has succeeded in making a diagnosis of intracranial hemorrhage by roentgen examination before the postmortem examination was made. It was verified in each case. Prior to the examination he injected into the internal jugular vein a mixture of lead tetra-oxide, gelatin, chalk and water. Sometimes the chalk was omitted. The amount of solution required is from 60 to 100 cc. The size of the skull and the extent of the seat of the hemorrhage are responsible for the discrepancy in the amount of the solution consumed. Forced pressure is avoided and the body is kept submerged in warm water. Autopsy performed on bodies thus injected revealed that the solution had penetrated into the finest capillaries.

Archives des Maladies du Cœur, etc., Paris

22: 577-640 (Sept.) 1929

Lesion of Right Branch of Atrioventricular Bundle: Bundle of His: Case. G. Agostoni.—p. 577.
*Angina Pectoris: Surgical Treatment in Two Cases. R. Leriche and R. Fontaine.—p. 588.
Heart Block of Syphilitic Origin: Case. M. Petzetakis.—p. 604.

Angina Pectoris: Surgical Treatment in Two Cases.—Leriche and Fontaine report good results following the excision of the superior cervical ganglion in a man, aged 47, who had had attacks of angina pectoris for about one and one-half years. During the operation an injury to an abnormally enlarged branch of the subclavian artery necessitated the placing of a ligature. The wound healed by first intention but the patient continued to have somewhat severe symptoms of angina during the next six months. Recovery was slow, but he is now reported to have been in perfect condition for more than eight months, in spite of leading an active life. The second patient, a woman, aged 42, was reported to have had attacks of angina pectoris since 1914. These had increased in frequency and intensity and previous to the operation she had been confined to her bed for several months. After a preliminary test by injection, the left cervical ganglion was removed, together with the entire greatly enlarged stellate ganglion. Her condition improved at first, but a recurrence of severe attacks of pain necessitated a second intervention and the right stellate ganglion was removed four weeks later. Since then four months have passed and the patient has resumed her work without any discomfort or pain resulting.

Journal de Chirurgie, Paris

34: 281-424 (Sept.) 1929

*Late Results of Sympathectomies: Neuromas of Cicatrization. R. Leriche and R. Fontaine.—p. 281.
*Gangrene of Lower Extremities: Value of Arteriography. R. Leibovici. —p. 293.
Treatment of Bronchiectasis by Cautery Pneumectomy. M. Iselin.—p. 311.

Late Results of Sympathectomies: Neuromas of Cicatrization.—Leriche and Fontaine report the occurrence of a complex of symptoms following sympathectomy, which annuls the results desired of this operation. The formation of neuromas constitutes the reason why results that are originally good eventually become less marked or are followed by the development of a disorder topographically different but, on the whole, of the same character as the one for which the original operation had been done. The case histories of two patients are especially illustrative of this occurrence. The first patient, a woman, aged 46, had been suffering from severe pain in her left shoulder occurring after a cut of the extensor tendon of her left thumb. To relieve this condition, sympathectomy was done. Several weeks later an increasing ptosis and pain in her eye developed. Excision of a slightly painful swelling near the old operative scar restored the condition to normal. Microscopic examination showed the excised portions to be neuromas. However, partial recurrence of the ptosis caused her to return to the clinic. After three injections of air into the region of the scar she was completely relieved. The second patient, a woman, aged 34, had been operated on for angina pectoris. Several months later the symptoms of the disease recurred. On examination of the scar, it became evident that adhesions had developed and that dense fibrous tissue had formed, in spite of the fact that the first operation had been without complications. Excision of what appeared to be the superior cervical ganglion gave relief and eight months later the patient was still in good health. Microscopic examination revealed that the excised piece of tissue was a neuroma. The authors have attempted to avoid this pathologic formation by the use of the electric cautery and the injection of alcohol, but they have not obtained the desired result. Experiments with the injection of phenol according to the technic of Bewerschenko or Fedoroff are under way.

Gangrene of Lower Extremities: Value of Arteriography.—Following an historical review and a detailed description of the technic, Leibovici discusses the interpretation of the results and the contraindications to the use of this method. According to his conception, errors of amputation occur because too great value is laid on the condition of the main vessels. He points out that slow obliteration of the large vessels can occur without evidence of a trophic disturbance. The state of the collateral blood supply is of far greater importance. Arteriography depicts only the condition at a given moment, but does not enable one to observe evolutionary factors which are of fundamental importance. A blood supply adequate for normal nutrition may not suffice for cicatrization of the amputation stump. Latent necrosis is often revealed by extension of the thrombosis due to angiitis, thus obliterating many collaterals. The progress of angiitis is met by an effort on the part of the collateral circulation to compensate for the ensuing condition and often an apparent involvement of the entire foot is finally reduced to the gangrene of several toes. Although in old age, extensive amputation prevents pain and decubitus, for other adults a more conservative treatment is advised. Clinical evidence for the level of amputation is furnished by the so-called area of elimination. The bordering tissue becomes normal and gives evidence of an increased blood supply. A further proof of localization of the gangrene is the disappearance of pain. As long as pain persists the sphacelation increases. On the basis of his experience Leibovici concludes that, for the present, arteriography is only of limited importance for the determination of the place of amputation and that clinical methods are of greater value. Good results may be obtained by the application of the plethysmograph according to the methods of Pachon or of Moskowicz.

Presse Médicale, Paris

37: 1293-1308 (Oct. 5) 1929

Respiratory Surface of Lung. A. Policard.—p. 1293.
*Coxalgia Due to Tuberculous Osteitis of Acetabulum. C. Rœderer.—p. 1295.

Coxalgia Due to Tuberculous Osteitis of Acetabulum.—On the basis of his experience in five cases occurring in children and one case in an adult, Rœderer points to the difficulty of early diagnosis in these cases. The long duration of the disease is characteristic. In one child more than three years passed from the insidious onset to the acute manifestation of the destructive process. According to Rœderer one may distinguish three stages in the evolution of the disease. First there is a long period of indefinite pain with symptoms of fatigue, similar to the type of growing pains in children. In a second phase the tuberculous lesions perforate the top of the acetabulum and cause acute symptoms resembling arthritis; an abscess is often present in this stage. In the last stage, the condition has improved and the coxalgia persists. In three of the five children the coxalgia was due mainly to destruction of the lower part of the ilium with slight changes in the head of the femur. Plaster-of-paris casts are of value, but early operation constitutes, according to Rœderer, the best way to preserve the joint.

37: 1309-1324 (Oct. 9) 1929

*Condition of Sympathetic Nervous System in Permanent Arterial Hypotension and Hypertension. C. Lian, S. Stoicesco and C. Vidrasco.—p. 1309.
Traumas of Skull and Brain: Incidence Thirty Years Ago and Now. H. Vulliet.—p. 1313.
Acute Appendicitis: Diagnosis and Treatment. A. Chalier.—p. 1315.

Condition of Sympathetic Nervous System in Permanent Arterial Hypotension and Hypertension.—Using a glass plethysmograph large enough to hold the hand, the forearm and the lower third of the arm, Lian et al. studied the tracings obtained without stimulus and the effects of forced inspiration, of contraction of the flexor muscles of the fingers enclosed in the apparatus, of cold and hot water applied to the shoulder of the enclosed arm, of the vascular reflexes and of pharmacodynamic substances. As a result of their experiments, they conclude that permanent arterial hypotension of an apparently idiopathic type is characterized by a hypo-excitability of the vasoconstrictor nerves and hypertension by a hyperexcitability of these nerves. The results of the experiments present an excellent argument in favor of the existence of arterial hypotonia in hypotension and of arterial hypertonia in hypertension. A study of the cardiac sympathetic reaction gave, on the contrary, almost identical results in the two disorders. This may be explained by the fact that the reaction of the circulatory disorder is greatest in the vessels. The tests used are based on the rate of cardiac contractions which, although being influenced by disorders pertaining to their regulation, do not register disorders of other functions of the myocardium; therefore these have heretofore not been evident. In view of these facts, Lian et al. point to the importance of testing the reactions of the sympathetic nerves in the diseased organ itself and of not applying the result of the test in one organ to the entire sympathetic nervous system.

Riforma Medica, Naples

45: 1202-1231 (Sept. 7) 1929

Chirodystrophia from Long Continued Close Work of a Minute Nature, Resulting in Chronic Acrodermatitis. L. Tommasi.—p. 1203.
Chloruremia and Azotemia in Nephritis. P. Moretti.—p. 1204.
*A New Test for Classification of Serous Effusions as Exudates and Transudates. O. D'Allocco.—p. 1209.
*Neurosyphilis in Mussulmans of Tripolitania. D. Longo.—p. 1209.
Ocular Signs of Death. V. M. Palmieri.—p. 1214.

Classification Test for Exudates and Transudates.—D'Allocco states that, for a number of years, when using the Rivalta acetic acid test for the differentiation of serous effusions as exudates and transudates, he has been in the habit of using an alcohol test for the purpose of confirming and comparing the results. He takes from 4 to 5 cc. of alcohol, at a temperature of 90 C. (194 F.), in a test tube and allows the fluid to be examined to fall into it a drop at a time. If it is an exudate, it forms immediately a concrete albuminoid coagulum of the appearance of a white shred of cloth or a snowflake, which settles to the bottom of the tube, and, on the addition of a few more drops after a short interval, assumes the form of a roundish setaceous mass on the surface; on the contrary, if the fluid is a transudate, a white coagulum is formed that is not concrete but rather powdery or caseous, which remains on the bottom.

Neurosyphilis in Mussulmans of Tripolitania.—After calling attention to the various theories hitherto advanced in explanation of the rarity of neurosyphilis in Mussulmans, Longo describes briefly ten personal observations made among the Arabians of Tripolitania. He confirms the observations made in Algeria by Goëau-Brissonnière and points out the high percentage of metasyphilis. He denies the rarity of neurosyphilis among the Arabians, and asserts that neurosyphilis is, on the contrary, now and always has been just as frequent among the Arabians as among Europeans.

45: 1234-1267 (Sept. 14) 1929

*Action of Ergotamine in Exophthalmic Goiter. G. Pennetti.—p. 1235.
Roentgen Therapy in Perforating Ulcer of Foot. L. Turano.—p. 1242.
Pathogenesis of Pulmonary Syphilis. C. Patiño Mayer.—p. 1247.

Action of Ergotamine in Exophthalmic Goiter.—Ergotamine treatment, Pennetti reports, influences exophthalmic goiter favorably by lowering the glycemia if abnormally high, and modifying the tachycardia. It gives the patient a sense of well being, and tends to bring up the weight. The eye symptoms and the goiter are not influenced to the same extent. In other words, it is mainly the manifestations of hyperfunctioning of the sympathetic nervous system that are benefited by ergotamine, which is in conformity with the general action of this alkaloid, while other manifestations due to the qualitative modifications of the thyroid secretion or to the excitation of the vagus nerve are scarcely changed.

Tumori, Milan

3: 533-666 (Sept.-Oct.) 1929

Dehydration Processes in Normal and Neoplastic Tissues. L. Barelli.—p. 533.
Promotion of Growth by Transplanting Organs or Injecting Blood from Animals with Experimental Adenocarcinoma. T. Anardi.—p. 561.
Giant Cell Polymorphic Fibrosarcoma of Periosteum of Left Ischiopubic Ramus Simulating Vulvovaginal Cystic Tumor. C. Armanini.—p. 585.
*Generalized Carcinomatous Lymphangitis of Lungs. L. Docimo.—p. 600.
*Hypernephroma: Nephrectomy: Recovery. A. Cardia.—p. 621.
Cancer of Stomach. V. Pettinari.—p. 631.

Generalized Carcinomatous Lymphangitis of Lungs.—Docimo considers generalized carcinomatous lymphangitis of the lungs an uncommon condition which represents a secondary manifestation of cancer of the stomach. The metastases of cancer of the stomach attack the lungs by the hematic and the lymphatic routes. The condition may also be secondary to cancer of some other of the organs of the abdomen, when the lymphatics of the abdomen are affected. Among 491 autopsies performed on bodies of persons who died from cancer, the author found 135 cases of cancer of the stomach. In only three of these cases was generalized lymphangitis of the lungs found. Another case of generalized lymphangitis of the lungs was observed in a patient with cancer of the stomach, but when this patient died, autopsy was not permitted. The patients were from 30 to 40 years of age. The principal factors necessary to determine the condition are the dissemination of the neoplastic elements in the lymphatic tree of the lungs, even in its smallest ramifications, the stasis of the lungs caused by the massive attack of the neoplastic elements, and the favorable conditions of the lymphatic system of the lungs, permitting the proliferating activity of the neoplastic cells.

Hypernephroma: Nephrectomy: Recovery.—Cardia divides hypernephromas of the kidney into tumors of the cortex and of the medulla. The author's patient, aged 56, had hypernephroma of the kidney. For five years the evolution of the disease seemed slow; but suddenly the patient had two severe attacks of hematuria. Nephrectomy was performed successfully but the suprarenal gland could not be found. The tumor was in the kidney. The author says that though in most of the cases hypernephroma of the kidney has its origin in suprarenal rests, in some cases the tumors may have an origin in the renal elements. In the author's case the patient was still well, one year after the operation.

Siglo Médico, Madrid

84: 325-348 (Sept. 28) 1929

Psychobiology of Temperaments. Sáenz de Santa María.—p. 325.
*Large Doses of Sodium Salicylate in Treatment of Acute and Chronic Polyarthritis. Y. T. Peters.—p. 335.
Diagnosis and Treatment of Retroversion and of Retroflexion of Gravid Uterus. J. Lacasa Val.—p. 337.

Large Doses of Sodium Salicylate in Treatment of Acute and Chronic Polyarthritis.—Peters obtained good results in the treatment of acute and chronic rheumatic polyarthritis by the use of large doses of sodium salicylate. During the entire treatment, the patients were confined to bed. All the affected joints were covered with cotton. The author used the following formula: sodium salicylate, 30 Gm., sodium bicarbonate, 60 Gm., simple syrup, 300 cc. and distilled water, 1,000 cc. This preparation was given in doses of 50 cc. every two hours (from 8 a. m. to 12 p. m.) till the fever disappeared. Sugared water was given after each dose. The appetite increased and improvement in the symptoms was observed from the first days of the treatment. Unpleasant effects were not observed. If the patient complained of discomfort, either a dose was omitted or the treatment was stopped for one day. After the disappearance of the fever, the patients remained in bed for three days, during which time they received the same dose of the preparation. Thereafter the remedy was given at intervals of four hours. If the pain reappeared, the intervals were decreased to two hours for a few days more. As soon as there was improvement, the four hour interval was resumed and maintained for one month more. The author believes that the treatment should also be useful in rheumatic endocarditis.

Archiv für Hygiene, Munich

102: 71-131 (Aug.) 1929

Cultivation of Bacteria as Aid in Experimental Investigation of Growth of Population. O. Bail.—p. 71.
*Infection of Man with Brucella Abortus. F. Weigmann.—p. 77.
*Effect of Heat on Toxic Action of Poisonous Gases. R. Leites.—p. 91.
*Erythrocytes with Basophilic Granules in Persons Without Lead Poisoning. H. Lehmann.—p. 111.
*Local Action and Resorption of Carbon Tetrachloride and Chloroform by Skin. G. Lapidus.—p. 124.

Infection of Man with Brucella Abortus.—Weigmann states that of thirty-eight patients with undulant fever, seventeen gave a history of contact with cows that had aborted and twelve stated that they drank raw milk. In most of the cases there was a parallelism between the results of serologic examination and the clinical symptoms. The author demonstrated that undulant fever developed in guinea-pigs not only following the peroral administration of milk from infected cows but also following its introduction through the scarified skin by means of inunction. He believes, however, that in man the great majority of cases of undulant fever are caused by drinking infected milk.

Effect of Heat on Toxic Action of Poisonous Gases.—In experiments on cats Leites found that heat increases the toxic action of hydrochloric acid fumes because, as a result of the increased respiration, more poison is inspired; if the polypnea does not occur the toxic action of the hydrochloric acid fumes is not increased. The author believes that this hitherto unobserved fact that the toxicity of a gas depends not only on its concentration but on the temperature at which it is inspired is of great significance in practical industrial hygiene.

Erythrocytes with Basophilic Granules in Blood of Persons Without Lead Poisoning.—Lehmann reports the presence in the blood of cement workers and of patients who were being given small doses of alcohol subcutaneously of a larger number of erythrocytes with basophilic granules than is found in the blood of patients with lead poisoning.

Local Action and Resorption of Carbon Tetrachloride and Chloroform by Skin.—In a study of the percutaneous resorption of carbon tetrachloride and chloroform applied to the ears of rabbits, Lapidus noted that both substances caused the ears rapidly to become hyperemic and then markedly inflamed. Vesicles appeared and gave the condition the appearance of a second degree burn. While these changes were in progress there occurred a slight resorption of chloroform from the ears (in one ear from 40 to 70 mg. and in two ears from 82 to 140 mg.). Small quantities of chloroform were found also in the blood, liver and fat.

Deutsche medizinische Wochenschrift, Berlin

55: 1659-1700 (Oct. 4) 1929

Obstetric Operations and Manipulations in Narrow Pelvis. S. von Tóth.—p. 1659.
Means to Reduce Toxicity and to Increase Effectiveness of Chemotherapeutic Preparations. V. Fischl.—p. 1663.
*New Method for Determination of Oxygen in Blood by Means of Indophenol Blue: Results of Tests on Patients with Cancer and on Those Predisposed to Cancer. E. Sehrt.—p. 1666.
Comparison of Results of Sedimentation Reaction According to Methods of Westergren and Linzenmeier. W. Pfaff.—p. 1667.
Neurosis as a Reactive Psychic Disturbance: Criticism of Term Psychoneurosis. E. Speer.—p. 1668.
Criticism of Allergen-Free Chambers. E. Aron.—p. 1669.
Investigations on Bacterial Content of Nutritional Preparations. H. Junker.—p. 1671.
Constitutional and Exogenic Factors in Pathogenesis of Acetonemic Vomiting. E. Koehn.—p. 1672.
Syphilitic Gumma: Its Differentiation from Scrofuloderm. Ruete.—p. 1673.
Solution of Piperazin (Diethylen Diimine) for Treatment of Open Gout. E. Ebstein.—p. 1674.
Cystopyelitis as Complication of Pernicious Anemia. F. Basch.—p. 1674.
Treatment of Mixed Infection of Tuberculous Synovitis of Knee. A. W. Frank.—p. 1675.
Cause and Treatment of Spasm of Mammilla. Beck.—p. 1675.
Criticism of Dressing and Bedding of Infants: Description of New Dry Bed for Infants. G. Sepke.—p. 1676.
Nature and Frequency of Roentgen Injuries in Persons Operating Roentgen Apparatus. M. Friesleben.—p. 1680.

Determination of Oxygen in Blood by Means of Indophenol Blue: Results of Tests on Patients with Cancer and on Those Predisposed to Cancer.—According to Sehrt, the oxygen of the blood exists in two forms, namely, the activated and the molecular. The activated oxygen can be found in the granules of the leukocytes. The largest part of the molecular oxygen is combined with the hemoglobin and a small amount is probably in the serum. Formerly the oxygen content was determined by means of the gas analytic method, which is based on Haldane's observation that potassium ferricyanide liberates oxygen from the blood, and on the determination of the iron by means of titration. This method gives an insight into the chemicophysical conditions, but not into the biologic state. This method also disregards the fact that the hemoglobin and oxygen content are not always parallel. The author describes a method which not only gives an insight into these conditions but which will also show certain characteristics in the blood of patients with cancer or of persons predisposed to this disease. To a mixture of alpha-naphthol and dimethyl-paraphenylenediamine (base) in a physiologic solution of sodium chloride is added, under exclusion of the air, a drop of blood from the lobule of the ear. When ammonia is added hemolysis occurs and oxygen is liberated. This oxygen forms indophenol blue. In a parallel experiment, likewise under the exclusion of air, potassium ferricyanide is added after the hemolysis is complete. After thirty minutes the content in indophenol blue is determined in both mixtures by means of a colorimeter. The values are compared. In thirty-three normal persons in whom these tests were performed, the difference between the two values averaged about 17.73. In eight patients with cancer who were likewise subjected to these tests the difference was only 8.5. It is also pointed out that if some persons are predisposed to cancer, there should have been values approaching those in patients with cancer among the thirty-three normal persons. This was actually observed in 12 per cent of them. The author states that this method is not to be considered as a substitute for the older method but only as a supplementary test, and tests on greater numbers of persons will be necessary to demonstrate its practical value.

Klinische Wochenschrift, Berlin

8: 1889-1936 (Oct. 8) 1929

Nature of Conduction Disturbances in Cardiac Muscle, Especially of So-Called Wenckebach's Periods. F. Schellong.—p. 1889.
Resistance to Incretions in Incretotherapy. W. Falta and F. Högler.—p. 1895.
Rôle of Oxygen in Oligodynamic Action of Meals. K. Süpfle.—p. 1899.
Pneumotachogram in Diseases of Lung and Respiratory Passages. A. Hartwich.—p. 1902.
Differences in Physiology of Digestion Following Resection of Stomach According to Billroth I and According to Billroth II. E. Hertel.—p. 1904.
Demonstration of Epidermophyton in Blood in Case of Primary Exogenic Mycosis of Feet with Secondary Dyshidrotic Epidermophytid of Hands. S. M. Peck.—p. 1905.
Therapy in Placenta Praevia. H. Krukenberg.—p. 1905.
*Sedimentation Speed in Elderly and in Aged Persons. L. Löw-Beer.—p. 1909.
Nature and Development of Antirachitic Vitamin: Its Demonstration in Barley Grains Germinated in the Dark. A. Schittenhelm and B. Eisler.—p. 1911.
Significance of Alkaline Reaction for Development of Cancer. J. Flaszen and H. Wachtel.—p. 1912.
Syphilitic Mediastinal Pleurisy. O. Országh.—p. 1913.
Clinical Aspects and Roentgen Therapy in Lymphogranulomatosis. C. Kruchen.—p. 1915.
Types of Mycosis Cutis: Their Dissemination and Means of Combating Them. A. Alexander.—p. 1919.

Sedimentation Speed in Elderly and in Aged Persons.—Löw-Beer tested the sedimentation speed of 429 persons. The majority of the patients were elderly persons. Only a small group of younger individuals served as controls. The patients were divided into three groups. To the first group belonged those persons who were free from diseases that cause changes in the sedimentation speed. To the second group belonged those patients who were in a good general condition but who had light chronic infections such as cystitis, cholecystitis, bronchitis, tuberculosis and tonsillitis. To the third group belonged patients with sepsis, pyemia, pneumonia, cystopyelonephritis, anemia and malignant tumors. In these a considerable increase in the sedimentation speed could be expected. The results of the tests are summed up as follows: 1. The sedimentation speed increases with advancing years. Beginning at the age of 40 an accelerated sedimentation becomes manifest, even if pathologic conditions are absent. 2. A slight increase in the sedimentation, in excess of that which is characteristic for the age group, nearly always indicates an occult infection. In elderly persons, minor

infectious processes influence the sedimentation speed much more than they do in earlier periods of life. 3. Considerable acceleration of the sedimentation speed indicates serious pathologic conditions.

Medizinische Klinik, Berlin

25: 1531-1570 (Oct. 4) 1929

Asthma: Present Status of Knowledge Concerning Its Nature, Pathogenesis and Treatment. O. Müller.—p. 1531.
Methods for Roentgen Demonstration of Mucous Membrane of Stomach in Relief. H. J. Teschendorf.—p. 1535.
Physiognomy in Internal and in Nervous Disorders. O. Weltmann.—p. 1536.
Stab Injuries of Brain. H. Schloffer.—p. 1539.
*Hypertrophy of Prostate and Its Relation to Cardiovascular System. J. J. Stutzin.—p. 1541.
Agenesis of Tricuspid Valve. J. Rihl, K. Terplan and F. Weiss.—p. 1543.
Resorption Capacity of Spleen for Medicines and Poisons. F. Hendrych and E. Starkenstein.—p. 1546.

Hypertrophy of Prostate: Its Relation to Cardiovascular System.—Stutzin points out that hypertrophy of the prostate generally occurs in persons aged 60 years or more. In these patients the cardiovascular system often shows degenerative changes. In many cases, however, the hypertrophy of the prostate has an injurious influence on the vascular system. It causes retention of the urine. This, in turn, causes an increase in the blood pressure. If the retention is overcome either by catheterization or by operative treatment, the hypertension decreases again. The author also describes cases in which retention of urine developed in patients with hypertension. He reports the cases of two patients in whom the retention could not be traced to an organic disorder but in whom hypertension and retention of urine were the result of psychic disturbances. The author further discusses the therapy of hypertrophy of the prostate. He points out that permanent improvement can be obtained only by removing the obstruction; that is, by operation. If surgical treatment is intended, the condition of the cardiovascular system is of the greatest significance. It is necessary that the vascular disturbances should be counteracted by sufficient rest, by dietary treatment and by the administration of medicaments before the operation is performed. Balneotherapy has likewise proved effective in the therapy of cardiovascular disturbances. It is also pointed out that a hypertension that is not accompanied by changes in the cardiovascular system does not contraindicate the surgical removal of the hypertrophied prostate, because the hypertension is frequently caused by this obstruction and is reduced after the operation. Consequently, it is rather an indication than a contraindication for operative treatment. The author states that the operation should be performed under general narcosis rather than under local anesthesia. This will protect the patient against psychic shocks.

Münchener medizinische Wochenschrift, Munich

76: 1705-1744 (Oct. 11) 1929. Partial Index

Mechanism of Perforation of Abscess. C. Ritter.—p. 1705.
Opportune Time for Operations During Childhood. F. Ewald.—p. 1708.
Simple Clinical Method to Determine Resistance of Walls of Capillaries. A. da Silva-Mello.—p. 1717.
Occurrence of Muck's Vasomotor Nasal Reflex Following Galvanization of Head. W. Baumann.—p. 1719.
Psychotherapy in Form of Autosuggestion and Mass Suggestion. Delius.—p. 1720.
*Pathogenesis and Treatment of Gastric Ulcer and Observations on Patients Aged More Than Sixty. L. Fischl.—p. 1720.
New Modification of Gastroscope. A. N. Hagmann.—p. 1722.
Medicine and Mathematics. G. Dahlberg.—p. 1722.
Value of Various Kinds of Bread. A. Hartmann.—p. 1724.

Pathogenesis and Treatment of Gastric Ulcer.—Fischl points out that many of the numerous new theories concerning the pathogenesis of gastric ulcers are contradictory and cause confusion. Thirty years of observation on patients with gastric ulcer convinced the author that two factors are significant in the development of ulcer of the stomach: 1. A peptic ulcer does not exist unless gastric juice is present. The author never detected an ulcer in achylia. Whenever tests revealed the total absence of hydrochloric acid and of pepsin, the diagnosis of gastric ulcer was later proved erroneous. 2. If dead tissues do not develop in the wall of the stomach, a gastric ulcer is not present. Concerning the therapy of gastric ulcer, it is pointed out that in recent years the surgical treatment has been more and more limited. Only severe stenosis, perforation or continuous hemorrhages are now considered indications for operative treatment. For all other cases the nonsurgical treatment is preferable. The author reports his observations of five patients with ulcer of stomach. All of them were past the age of 60. Because of the age of the patients, the high blood pressure and the presence of cardiac and bronchial disturbances, surgical treatment was contraindicated. One patient had one severe hemorrhage and the others had repeated hemorrhages; however, none were fatal. Hyperacidity and disturbances in the motility were noted in all instances, and roentgenoscopy revealed a niche in three of the cases. These five persons were under the author's observation for periods of from fifteen to twenty-five years. The patients were confined to bed. During the day they were in a half sitting position and at night in a horizontal one. They received either the Leube or the Lenhartz treatment in combination with the Sippy cure. Medicaments were also employed. In one case good effects were obtained with parenteral protein therapy. The author asserts that all patients showed betterment in their general condition. For years they were free from pain, the niches disappeared and the motility of the stomach was improved. Three of the patients are still alive. One died at the age of 86 from cancer of the larynx. In the second patient death was caused by acute enteritis and by cardiac insufficiency. None died as a result of the gastric ulcer.

Strahlentherapie, Berlin

33: 399-600 (Aug. 26) 1929

*Therapeutic Uses of Cathode Rays. W. Baensch and R. Finsterbusch.—p. 399.
*Roentgen Treatment in Bone Tumors. J. Borak.—p. 435.
*Roentgen Treatment in Cancer of Uterus and Mamma. H. Wintz.—p. 456.
Treatment in Uterine Myomas. E. Wehefritz.—p. 467.
*Roentgen Treatment in Inflammations of Genitalia. F. Seisser.—p. 471.
*Indications for Grenz Rays in Dermatology. H. Fuhs and J. Konrad.—p. 479.
Leukamid Following Roentgen Irradiation in Chronic Myeloid Leukemia. A. Grosglik.—p. 498.
Effect of Roentgen Irradiation of Cancer of Cervix Uteri on Reticulo-Endothelial System. H. Zacherl.—p. 515.
Decomposition of Cholesterol in Vitro by Roentgen Rays. A. H. Roffo and L. M. Correa.—p. 537.
*Direct Measurement of Dose of Roentgen Rays. R. Jaeger.—p. 542.
Physics of Thimble Ionization Chamber. R. Braun and H. Küstner.—p. 551.
Measurement of Roentgen Rays in Absolute Units. F. Sauter.—p. 560.
*Measurement of Roentgen Rays. P. Feldweg.—p. 574.
Advantages of Lenard Roentgen Tube. W. Schaefer and E. Witte.—p. 578.
Red Fluorescence in Region of Vulva in Genital Hemorrhage. H. Hauser.—p. 582.
Measures Used in Combating Cancer in Baden. R. Werner.—p. 588.

Therapeutic Uses of Cathode Rays in Skin Diseases.—Baensch and Finsterbusch first discuss the nature and production of cathode rays and the effect of the rays on plants bacteria and animals. The experiments on both plants and animals proved that the biologic action of cathode rays is limited to the surface. The authors therefore confined their use of cathode rays to the treatment of diseases of the skin. They obtained good results particularly in cancroids (even in those refractory to roentgen treatment), lupus exulcerans, verrucous tuberculosis, chronic eczema, warts and localized psoriasis. In lupus tuberosus, lupus carcinoma and infected slowly healing wounds, however, the results were unsatisfactory.

Roentgen Treatment in Bone Tumors.—Borak reports good results with roentgen irradiation in three cases of giant cell sarcoma, four cases of osteosarcoma and eight cases of cancer metastases in bones. He emphasizes the fact that cancer metastases in bones develop in a biologically foreign milieu and are biologically weak; this explains the fact that they are more sensitive to irradiation than metastases in other parts of the body and the cancer from which they developed.

Factors Influencing Results of Roentgen Treatment in Cancer of Uterus and Mamma.—Wintz states that the results of roentgen treatment in cancer of the uterus and mamma depend on whether the cancer is localized or generalized, the condition of the tumor and the surrounding tissues, the size of the dose of roentgen rays and the method of their application, the treatment before and after irradiation and the reaction capacity of the organism.

Value of Roentgen Treatment in Inflammations of Genitalia.—On the basis of results obtained in 300 patients

with various kinds and stages of inflammation of the genitalia, Seisser recommends roentgen irradiation in all old refractory and recurrent inflammations of the uterine adnexa. In a large number of cases it renders operation unnecessary. By means of it one can obtain complete clinical and anatomic healing even in some cases in which the process is far advanced. Repeated weak irradiation, which is the method of choice in tuberculosis of the genitalia, is indicated also in inflammations of different origins. In the great majority of cases unilateral castration is a particularly suitable, simple and effective method of irradiation in inflammation of the genitalia and is to be preferred to the unreliable, dangerous and technically difficult temporary sterilization. In women approaching the menopause (exceptionally in younger women), one is justified in performing complete castration. In rare cases of the most severe forms of pelvic peritonitis and parametritic infiltration of the pelvis, still larger doses of roentgen rays (up to the "cancer dose") are indicated.

Additional Indications for Use of Grenz Rays in Dermatology. — Fuhs and Konrad obtained good results with Grenz rays in the treatment of one case of Darier's disease, one case of atypical palmar ichthyosis, three cases of chronic lichenoid pityriasis, one case of acute varioliform pityriasis, one case of vascular poikiloderma (Jakobi), three cases of Spiegler's tumor and two cases of Durand-Favre's disease. In all these cases the pathologic condition had been refractory to other forms of treatment (even to roentgen irradiation) but retrogressed in a relatively short time under treatment with Grenz rays.

Direct Measurement of Dose of Roentgen Rays. — Jaeger describes a method for the direct measurement of the dose of roentgen rays in terms of roentgens per second or minute.

Measurement of Roentgen Rays. — Feldweg emphasizes the fact that the only way that the dose of roentgen rays used in a given case can be determined exactly is by means of continuous iontoquantimetric measurement.

Wiener klinische Wochenschrift, Vienna

42: 1309-1340 (Oct. 10) 1929

*Changes in White Blood Picture Following Muscular Activity and Its Practical Significance. F. Gaisböck.—p. 1309.
Constitutional Therapy in Women. B. Aschner.—p. 1313.
*Diabetes with Hypertrophy of Cortex of Suprarenals. H. Chiari.—p. 1318.
Significance of Negative Phase in Diphtheria. J. Siegl.—p. 1322.
Large Quantities of Serum in Treatment of Tetanus. E. Krammer.—p. 1324.
*Diabetic Pseudotabes Without Glycosuria: Symptomatology of Diabetes in Senility. H. Bix.—p. 1325.
Casuistics of Intestinal Diseases. C. Sternberg.—p. 1327.
Pathogenesis and Clinical Aspects of Cholelithiasis and Other Diseases of Biliary Tract. G. Singer.—p. 1328.
Radium and Roentgen Therapy in Urologic Diseases. G. Schwarz.—p. 1329.
Conservative and Operative Treatment in Diseases of Thyroid. B. Breitner.—p. 1331.
Psychotherapy and the General Practitioner. H. Kogerer.—p. 1332.

Changes in Leukocytes Following Muscular Activity. —Gaisböck made tests on persons before and after physical exercise. He asserts that not only the circulation and the breathing but also the blood picture reveal marked changes. An increase in the number of leukocytes is noticeable immediately after muscular exertion. The degree of the increase varies between 15 and 66 per cent above the values that were determined in the morning before the person had taken any food. The shifting to the left develops and subsides again simultaneously with the leukocytosis. These changes are strongest during the time when the largest quantities of lactic acid are brought into the blood stream, and when hyperpnea and the acceleration of the pulse are strongest. The author points out that, according to some authorities, the lactic acid is the main cause for these changes. Accordingly he reasons that if a person is given alkaline substances the blood picture will show different characteristics. Parallel tests were made on two persons who had been subjected to the other examinations. Ten minutes before the exercises they were given 15 Gm. of sodium bicarbonate. The tests, which were made after the muscular exercise, showed that the leukocytosis developed later and did not become as marked as in the other experiments. The author thinks that the buffering of the lactic acid by the alkali causes these differences. However, not only the products of muscular metabolism but also hemodynamic processes exert an influence on the blood. Simultaneously with the changes in the blood cells an increase in the volume of the circulating blood was noted. The author thinks that when the blood is forced out of the spleen, immature cells are carried into the blood stream. The practical significance of the changes in the blood picture is summed up as follows: The leukocytosis and the shifting to the left are either caused by exertion or are symptomatic of pathologic conditions. If they do not subside after a short time, the organism has been overtaxed and the individual should refrain from sport activities until normal conditions have been restored. By means of test exercises it can be determined whether the changes are only temporary or permanent.

Diabetes with Hypertrophy of Suprarenal Cortex. — Chiari reports the case of a man, aged 54. The anamnesis revealed that he had contracted syphilis in his thirty-seventh year. He had received arsphenamine treatments; after completion of this therapy, serologic tests had given negative results. During the war he had had malaria, from which he also recovered. Otherwise he had been healthy. Six weeks before he came to the hospital, he felt pains in the legs and simultaneously small vesicles formed on the oral mucous membrane. The edema and the vesicles disappeared gradually. But the patient had lost completely the sense of taste. His physician detected sugar in the urine and diagnosed the case as diabetes. The patient came to the hospital, where a careful examination revealed that the urine and blood contained unusually large quantities of sugar. Insulin injections and other forms of therapy brought no betterment. The patient died several days later in diabetic coma. The author gives a detailed report of the postmortem examination. The pancreas showed the changes that are typical of diabetes. A slight atrophy of the thyroid was also noted. The suprarenals showed marked hyperplasia and hypertrophy, each one weighing 20 Gm. A section of the organ showed that the enlargement affected mainly the cortical substance. The author reviews the literature on hypertrophy of the suprarenals. He points out that unilateral hypertrophy occurs in cases of insufficiency of one gland. Bilateral hypertrophy, however, is rare. It occurs during gravidity, in patients with atherosclerosis, and in persons with abnormal sexual development. Cases of hypertrophy of the suprarenals in patients with diabetes have not been reported. However, it has been demonstrated in animal experiments that certain relations exist between the pancreas and the suprarenals. Frequent injections of insulin cause changes in the suprarenals. The author points out that the sugar metabolism is influenced by epinephrine. He then discusses various theories concerning the significance of the cortical and of the medullary substances in the formation of epinephrine. He comes to the conclusion that in the case under consideration, the unusually high sugar content of blood and urine was probably caused by two factors, the degeneration of the islands of Langerhans and the hypertrophy of the suprarenals.

Diabetic Pseudotabes Without Glycosuria: Diabetes in Senility.—Bix describes the case of a woman, aged 60, in whom tabes-like symptoms were observed. The achilles tendon reflex and the patellar reflex were negative on both sides. There also existed slight ataxia, hypotonia, atrophy of the musculature and disturbed motility. However, the anamnesis gave no indications of a syphilitic infection; the pupillary reaction was normal, and the Wassermann reaction of the blood and the cerebrospinal fluid was negative. The case was therefore diagnosed as pseudotabes. This disease may be caused by alcoholism, by infectious diseases or by diabetes. In this patient, however, there were no indications for these conditions Repeated tests of the urine always demonstrated the absence of glycosuria. The anamnesis revealed that the patient formerly had received treatment for diabetes. The blood sugar was determined and 230 mg. per hundred cubic centimeters was found. It was now clear that diabetes was the pathogenic factor in this case of pseudotabes. The patient was given insulin injections. The amount of blood sugar decreased, the patient gained in weight and the polyneuritis gradually disappeared. The patient, who for more than a year had been

confined to bed, was able to walk with the aid of a crutch after the insulin treatment had been continued for two months. During all this time glycosuria did not become manifest. Later the insulin injections were discontinued and small amounts of sugar could be detected in the urine. The patient's general condition improved steadily and she was discharged from the hospital. The author asserts that such discrepancies between the sugar content of the blood and of the urine are most frequent in older persons. He also noted that in such persons the complications of diabetes are generally more severe. These observations led him to believe that glycosuria is a favorable condition for diabetic patients because it eliminates the sugar and thus prevents its excessive accumulation in the tissues and the development of complications. The author also points out that hyperglycemia is really the pathognomonic symptom of diabetes. A slight glycosuria or its complete absence does not always prove that the diabetes is not severe.

Zentralblatt für Gynäkologie, Leipzig

53: 2129-2192 (Aug. 24) 1929

*Anesthesia in Second Stage of Labor. A. Labhardt.—p. 2130.
*Rare Indications for Cesarean Section. H. H. Schmid.—p. 2132.
Protracted Menstruation. W. Lahm.—p. 2138.
Cleidotomy on Living Fetus. F. C. Wille.—p. 2144.
Vasomotor Weakness Following Tribromethanol Anesthesia. S. Goldschmidt.—p. 2149.
Interruption of Pregnancy in Complicated Myopia. E. Krieger.—p. 2150.
Rectal Examinations in Labor. M. Samuel.—p. 2153.
Fermentative Characteristics of Bacillus Vaginalis Döderleini. A. A. Smorodinzew and M. I. Kott.—p. 2155.

Anesthesia in Second Stage of Labor.—Labhardt recommends anesthesia with chloroform (usually from 50 to 80 drops) in the second stage of labor.

Rare Indications for Cesarean Section.—Schmid reports a case of edema of the vulva in a woman, aged 24, in whom the condition was so marked that he considered delivery by the natural route impossible and therefore performed cesarean section. In another woman, who had had otitis media for fourteen years, paralysis of the abducens nerve appeared suddenly during labor and cesarean section was performed to minimize the danger of meningitis.

53: 2193-2256 (Aug. 31) 1929

Determination of Termination of Ovulation. H. Knaus.—p. 2193.
Tribromethanol Anesthesia in Gynecologic Operations. H. Köhler.—p. 2209.
*Spontaneous Rupture and Hematoma of Rectus Abdominis Muscle. H. Hirsch.—p. 2214.
Statistics on Abortion. S. Peller.—p. 2216.
Use of Cinema Films in Teaching Surgical Technic. W. Liepmann.—p. 2227.
Peritonization in Operative Treatment of Inflammations of Uterine Adnexa. H. Bujakowski.—p. 2229.
*Invagination of Uterine Tube. B. Gogoberidse.—p. 2231.

Spontaneous Rupture and Hematoma of Rectus Abdominis Muscle.—Hirsch reports the case of a woman, aged 55, who four days previously, during an attack of coughing, had been suddenly seized with violent pain in the right hypogastrium. The pain was accompanied by tympanites and constipation that was not alleviated by enemas and cathartics. The abdomen became increasingly rigid and the general condition of the patient became disquieting. A physician made a diagnosis of ileus and sent the patient to the hospital, where the diagnosis was confirmed and operation was performed. The peritoneum and intestine were found to be normal but in the right rectus abdominis muscle there was a large hematoma, which was evacuated. Microscopic examination of pieces of muscle removed at operation showed an infiltration of blood between the muscle bundles but the muscle fibers were unchanged.

Invagination of Uterine Tube.—Gogoberidse reports the case of a woman, aged 20, who was brought to the hospital for an emergency operation. It was learned that six years previously the patient had had an artificial abortion and two years previously a normal labor. The last menstruation had appeared one month late and the patient had suffered for a month with a bloody discharge. Because of the bleeding a physician had curetted the uterus on the day preceding the patient's admission to the hospital; the curettage was followed by pain in the hypogastrium and that evening the patient was brought to the hospital in an unconscious condition. The pulse was weak and thready and could be counted only with difficulty and the skin and mucous membranes were pale. The abdomen was distended and rigid and abdominal palpation could not be performed. The temperature was 37.5 C. (99.5 F.). On bimanual examination the size and position of the uterus seemed to be normal; the right uterine adnexa, however, seemed to be enlarged. A diagnosis of ruptured tubal pregnancy was made and operation was performed. When the peritoneal cavity was opened a large amount of fluid and clotted blood was found. The outer half of the right uterine tube was dilated and the lumen was free. When the tube was delivered it was found that at a point between its outer and middle thirds, its medial portion was invaginated into the peripheral portion for a distance of 1 cm. The outer half of the tube was resected and a salpingostomy was performed. Microscopic examination of the operative specimen revealed hypertrophy of the muscular layer of the tube, particularly of the circular fibers. The author states that in a review of the available literature he was unable to find a report of a similar case.

Acta Medica Scandinavica, Stockholm

71: 439-597 (Oct. 21) 1929

*Acute Massive Atelectatic Collapse of Lung. H. C. Jacobæus, G. Selander and N. Westermark.—p. 439.
*Pernicious Anemia Without Manifest Anemia. E. Rosling.—p. 467.
Nosology of Lederer's Acute Hemolytic Anemia. T. Christiansen.—p. 472.
*Extrapyramidal Symptoms in Myxedema. Å. Barkman.—p. 479.
Carbohydrate Metabolism in Pulmonary Tuberculosis. E. Lundberg.—p. 493.
*Thoracoplasty in Pulmonary Tuberculosis. G. Hellsing.—p. 521.
Total Cholesterol and Total Fatty Acids in Blood in Manic-Depressive Insanity. S. Stenberg.—p. 558.

Acute Massive Atelectatic Collapse of Lung.—Jacobæus et al. report three cases of acute massive atelectatic collapse of the lung following hemoptysis in acute pulmonary tuberculosis. Two cases were associated with acute pneumonia and four followed the intrabronchial injection of iodized oil. He states that, although experimental atelectasis produced in animals by plugging of the bronchi may be demonstrated roentgenologically only after from four to six hours, atelectasis produced by the intrabronchial injection of iodized oil appears after from ten to fifteen minutes. In the latter cases the degree and extent of the collapse bears no direct relation to the amount of iodized oil injected intrabronchially. The authors assume therefore that the collapse of the lung is not brought about by the iodized oil alone but in part by a simultaneous spasm or contraction of the bronchi. The atelectatic collapse following the intrabronchial injection of iodized oil seems to take place principally in patients with normal bronchi. The spasm and contraction of the bronchi, which are factors in causing the collapse, seem to occur only in normal bronchi and disappear in a short time in bronchi in which pathologic changes are present. In patients in whom the bronchi are abnormal neither hemorrhage nor the intrabronchial injection of iodized oil produces atelectatic collapse of the lung.

Pernicious Anemia Without Manifest Anemia.—Rosling reports a case of pernicious anemia without anemia in a man, aged 53, in whom marked glossitis and acroparesthesias were present as initial symptoms. The diagnosis was confirmed by the demonstration of an increased color index, slight bilirubinemia, slight changes in the cerebrospinal fluid and nervous changes of the polyneuritic type.

Extrapyramidal Symptoms in Myxedema.—Barkman reports a case of myxedema in a woman, aged 47, who presented, in addition to several cerebellar symptoms that have already been noted in this disease, Westphal's paradoxic contraction and the myodystonic electrical reaction of the anterior tibial and long peroneal muscles.

Thoracoplasty in Pulmonary Tuberculosis.—Hellsing reports forty cases of thoracoplasty in pulmonary tuberculosis. On the basis of his experience he states that thoracoplasty is most effective in cases of unilateral chronic tuberculosis with a tendency to cicatrize and in which the general condition of the patient is good. The better lung must be healthy or the process in it must be stationary, and a long period of observation is necessary. The operation must be performed in an afebrile period. In cases with large apical caverns, thoracoplasty does not give good results.